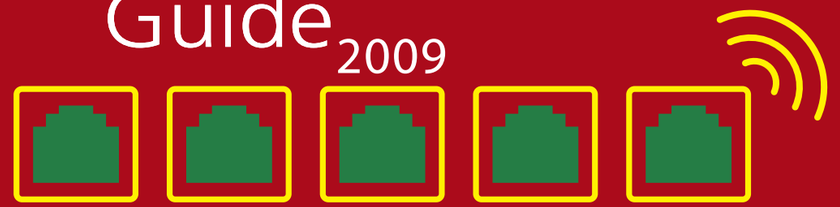
Edge-corE
Powered by Accton

Product Guide 2009



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Edge-Core

Edge-Core, an integrated service team subordinate to Accton Technology Corporation, was established on January 1st, 2004, with a view to provide an integrated service platform for Carrier / Service Providers, System Integrators and Enterprises. With the core competence under Accton Group - IC design techniques (ASIC Design), self-developed software platforms, and high-quality testing systems strengthen the cores of the Edge-Core team, targeting to offer more advanced and flexible networking services and solutions.

Philosophy

As Accton successfully identified its niche marketing strategies and maturely deployed its advanced technologies, its brand - Edge-Core, is positioned to provide fully tier-1 certificated products, which leverage for differentiation from other competitors in the market place, resonate with potential clients in order to build brand awareness and further increase their brand loyalty.

In addition, Edge-Core possesses circumspect strategies to fully leverage the power of internet for its services. Edge-Core will continue to create its brand equity and exceed customer expectation for its service.

Products and Services

Edge-Core is a trusted supplier of high value-added networking products which include ETTx and FTTx solutions, Enterprise switches, Wireless and Broadband Wireless solutions for Carrier / Service Providers, System Integrators, Enterprises. In addition, Edge-Core provides flexible, reliable solutions and services that meet and exceed clients' requirements, reserving buffer zone in case of any regional demand-fulfillment and feature-implementation needed.

From Wire to Wireless,
From Edge to Core.

"We believe in corporate responsibility and have taken the initiative to deliver environment-friendly products driven by innovative technologies. These "Green Inside" products will help people reduce energy consumption and decrease operating costs while uphold network performance and reliability." -Edge-Core's Commitment to the Environment

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Metro Access Overview

Ethernet has been the dominating technology for LAN for many years due to its simplicity and cost effectiveness. However, at the WAN side is dominated by more complicated, expensive, less bandwidth services such as ATM, fixed lines, and leased lines. With the demand of increasing services and bandwidth, business today are looking for a solution that's simple to deploy and offering enough bandwidth for their business needs. To fulfill the needs of today's business operators are looking into MEN (Metro Ethernet Network) technology to prepare for this increase demand. By making this transition to MEN technology, service providers can profit from lower operating expense and gain additional service revenue from this Ethernet all the way technology.

Edge-Core offers universal carrier-class access network products for broadband multimedia services including :

- **Metro Aggregation Switch**
  - Low port density fiber Aggregation (ES4612)
  - Middle port density fiber Aggregation (ES4624-SFP)
  - Middle port density with 10G Fiber Aggregation (ES4626-SFP)
- **Metro Access Switch**
  - Copper Metro Access (ES3528)
  - Fiber Metro Access (ES3528-WDM)
  - SFP Metro Access (ES3528M-SFP)
- **Metro Access CPE**
  - Metro Access Media Converter (EC3802-WDM)
  - Metro Access Gateway (EC3805 / EC3805F)

The Edge-Core Metro Access products are suitable for

- Current datacom equipment providers
- Providers: private E-Line and E-LAN business services and residential triple play services

And they are featured by the following benefits :

- Provide different interfaces (Copper/Fiber) to fit Metro market.
- Enhanced QoS features for triple play application
- Various uplink interfaces and software features for scalability
- Enhanced redundancy from both software and hardware
- Enhanced management and deployment features to help service providers
- Lower capital and operating expenditure than traditional circuit switch

Edge-Core Metro Access Switch series are designed to provide access at the consumer side and are employed with two essential technologies :

- **IEEE 802.3ah Ethernet in the First Mile**

The IEEE802.1ah Ethernet in the first mile has the capabilities to detect, setting flags, loopback, and issue critical events for the CPE. Unlike SNMP or ping, the IEEE802.3ah standard doesn't require an IP address to perform the necessary function that needs for an operator to control the CPE.

Since the IEEE link-layer OAM is generally used over a link between a service provider and a customer, it defines two modes for OAM entities: active or passive. The elements of the provider network (e.g. DSLAMs or provider Ethernet switches) operate in active mode, and can exert control over the passive-mode devices (e.g. DSL modems or customer premises switches).

- **IEEE 802.1ad (Q-in-Q, stacked VLANs or Provider Bridges)**

The original concept of ethernet is to provide a minimal installation effort in hubs, switch, by using flat network architecture. This concept is fine within the LAN network, but to offer different services using ethernet on WAN, providers need someway to divide the network into different networks for each user and services.

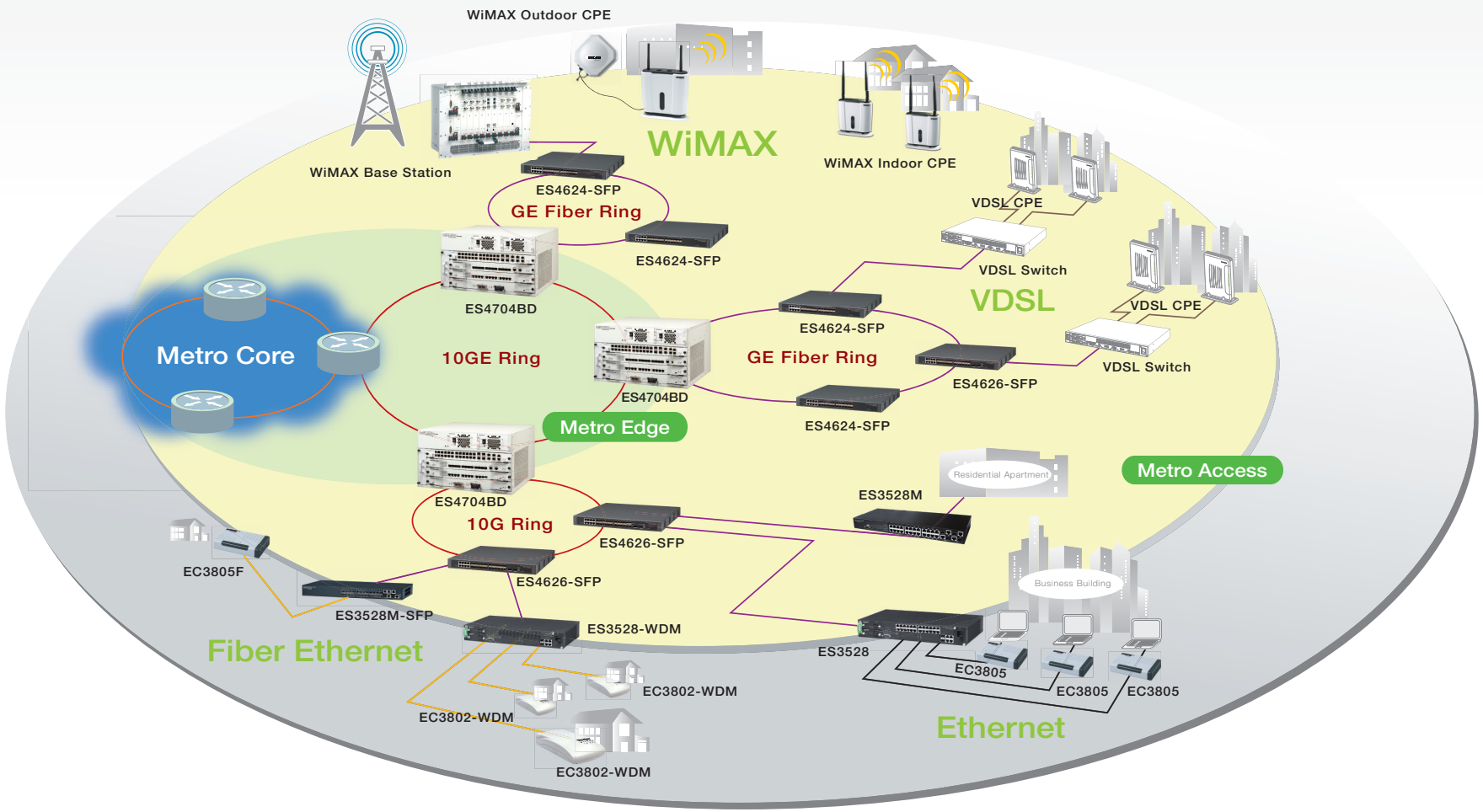
This is nothing new on LAN since enterprise need to use VLANS to separate different access rights for departments. Each VLAN is identified by a 802.1Q tag which represents the logical partitioning of the network to serve different department interests. This method is an improvement from a flat network to a hierarchy network.

To deliver more services to more end-users over a shared Ethernet infrastructure that cover great distance, service providers need to add a hierarchical view within their IP network. But the traditional 802.1Q doesn't offer enough VLANs. To solve this need for Metro Ethernet Network, there are two standards to this hierarchical method. The first is IEEE802.1ad Q-in-Q and the second is IEEE802.1ah MAC-in-MAC. Q-in-Q extends the original concept of VLANs to add a new Q tag that allows the service provider to administrate their own tags to identify individual customer networks while the original Q tag identify within the customers network. This helps the service to support a 3rd hierarchy for the service provider to provide their services to all customers.

In general, Q-in-Q function offers the following benefits to the network:

- Expands from 4096 VLAN ID to 40962
- Provides easier network management
- Provides better security along with a more cost-effective solution

Metro Access Solution



Metro Aggregation Switch

L3 SFP Metro Aggregation Switch
ES4612

SFP | OSPF | PIM-DM | QoS

Physical Configuration :
- Fixed Ports : 8 x 100BASE-X SFP + 4 x Gigabit Combo (RJ45 / SFP) ports
- Dimension (HxWxD) cm. : 1 RU (4.4 x 44 x 23)
- Weight : 3.24Kg
- Flash Memory : 16MB
- SDRAM for CPU : 64MB
- Packet Buffer : 2MB

Performance :
- MAC Address Table Size :16K
- Switching Capacity : 24Gbps
- Forwarding Rate : 17.9Mpps

L3 SFP Metro Aggregation Switch
ES4624-SFP

IPv6 | SFP | OSPF | BGP | PIM-SM/DM | IP Clustering | QoS | Q-in-Q

Physical Configuration :
- Fixed Ports : 16 x 1000BASE-X SFP + 8 x Gigabit Combo (RJ45 / SFP) ports
- Dimension (HxWxD) cm. : 1 RU (4.4 x 44 x 43.6)
- Weight : 3.72Kg
- Flash Memory : 8MB
- SDRAM for CPU : 128MB
- Packet Buffer : 2MB

Performance :
- MAC Address Table Size : 16K
- Switching Capacity : 48Gbps
- Forwarding Rate : 35.7Mpps

L3 SFP Metro Aggregation Switch
ES4626-SFP

IPv6 | SFP | OSPF | BGP | PIM-SM/DM | IP Clustering | QoS | Q-in-Q | 2*10G

Physical Configuration :
- Fixed Ports : 16 x 1000BASE-X SFP+ 8 x Gigabit Combo (RJ45 / SFP) + 2 x 10G XFP ports
- Dimension (HxWxD) cm. : 1 RU (4.4 x 44 x 43.6)
- Weight : 4.34Kg
- Flash Memory : 8MB
- SDRAM for CPU : 128MB
- Packet Buffer : 2MB

Performance :
- MAC Address Table Size : 16K
- Switching Capacity : 88Gbps
- Forwarding Rate : 65.5Mpps

ES4612
ES4624-SFP
ES4626-SFP

*Advanced QoS features suitable for triple-play services
*Complete network security features with wire-speed performance
*High reliability to prevent traffic broken
*IPv4: Unicast routing protocols, including OSPFv2, RIPv1/v2, BGP4 and multicast routing protocols, including DVMRP, PIM-SM/DM
*IPv6: RIP-NG, OSPFv3, BGP4+, PIM-DM6, PIM-SM6, IPv6 tunneling, ISATAP
*DHCP relay and DHCP server features

Metro Access Switch

L2 Copper Metro Access Switch
ES3528

Front Access | Dual Power Supply | QoS | Security | OAM | Q-in-Q | IPTV

Physical Configuration :
- Fixed Ports: 24 x 100BASE-TX + 2 Gigabit Combo (RJ45/SFP) ports
- Expansion Slots : 2
- Optional Modules : EM3526V-1GBGT
- Dimension (HxWxD) cm. : 1.5 RU (6.7 x 44 x 25.6)
- Weight : 5.0Kg
- Dual Power Supply (AC/DC)
- Out-of-Band Mgmt Console Port
- Out-of-Band Mgmt FE Port
- Flash Memory : 16MB
- SDRAM for CPU : 64MB
- Packet Buffer : 32MB
- Alarm I/O ports
- Fan Tray

Performance :
- MAC Address Table Size : 16K
- Switching Capacity : 12.8Gbps
- Forwarding Rate : 9.5Mpps

I/O Modules

EM3526V-1GBGT
1000BASE Combo Module

L2 WDM Metro Access Switch
ES3528-WDM

Front Access | Dual Power Supply | QoS | Security | OAM | Q-in-Q | IPTV | WDM

Physical Configuration :
- Fixed Ports : 24 x 100BASE-BX + 2 Gigabit Combo (RJ45 / SFP) ports
- Expansion Slots : 2
- Optional Modules : ES3526V-1GBGT
- Dimension (HxWxD) cm. : 1.5 RU (6.7 x 44 x 25.6)
- Weight : 5.0Kg
- Dual Power Supply (AC/DC)
- Out-of-Band Mgmt Console Port
- Out-of-Band Mgmt FE Port
- Flash Memory : 16MB
- SDRAM for CPU : 64MB
- Packet Buffer : 32MB
- Alarm I/O ports
- Fan Tray

Performance :
- MAC Address Table Size : 16K
- Switching Capacity : 12.8Gbps
- Forwarding Rate : 9.5Mpps

I/O Modules

EM3526V-1GBGT
1000BASE Combo Module

ES3528
ES3528-WDM

* Carrier-class mechanical design for extreme weather (operating temperature: -20℃-+65℃)
* Carrier-class H/W and high reliability feature for non-blocking service
* Dual power supply to provide service provider with redundancy and variety
* All front connectors, fan, and power supply design simplify field installation (AC or DC) and troubleshooting
* Flexible uplink options
* Metro Ethernet specific security (IP Source Guard, Port Security, DHCP Snooping, ARP Inspection) and management features
* Advanced QoS features for triple-play service
* IEEE 802.3ah OAM supported
* L2 Tunneling Protocol
* CDP / PVST Filtering

Metro Access Switch

L2 SFP Metro Access Switch

ES3528M-SFP

QoS | Security | OAM | Q-in-Q | IPTV | WDM | SFP Open Slots

Physical Configuration :

- Fixed Ports : 24 x 100BASE-X SFP + 2 1000Base-T + 2 Gigabit Combo (RJ45 / SFP) ports
- Dimension (HxWxD) cm. : 1 RU (4.3 x 44.0 x 17.1)
- Weight : 3.5Kg
- Slot for Redundant Power Supply
- Out-of-Band Mgmt Console Port
- Flash Memory : 4MB
- SDRAM for CPU : 16MB
- Packet Buffer : 512KB

Performance :

- MAC Address Table Size : 8K
- Switching Capacity : 12.8Gbps
- Forwarding Rate : 9.5Mpps

ES3528M-SFP	* Carrier-class OAM 802.3ah enables service providers to easily troubleshoot and provision services for customers and deliver improved SLAs * Flexible FE SFP open slots for variable distance * Enhanced security features (IP source guard, DHCP Snooping, port security...etc) * Guaranteed QoS features to realize triple-play services * VLAN Stacking (Q-in-Q) to achieve L2 VPN Network

* For more Metro Access Switches, please see page 22

Metro Access CPE

L2 Metro Access CPE

EC3802-WDM

OAM | WDM | Web Management

Physical Configuration :

- Fixed Ports : 1 x 100Base-BX Fiber +1 x 100BASE-TX port
- Dimension (HxWxD) cm. : 3.5 x 11 x 18
- Weight : 0.5kg

Performance :

- MAC Address Table Size : 2K
- Switching Capacity : 0.4Gbps
- Forwarding Rate : 0.3Mpps

Features :

- Web Interface
- Firmware upgrade : HTTP
- IEEE 802.3ah
- Wavelength: Transmit-1310nm, Receive-1550nm

L2 Metro Access Gateway

EC3805

802.1Q VLAN | IGMP Proxy | IGMP Snooping

Physical Configuration :

- Fixed Ports : 5 x 100Base-TX with RJ-45 Connector
- Dimension (HxWxD) cm. : 2.8 x 15 x 9.8
- Weight : 0.2kg

Performance :

- MAC Address Table Size : 2K
- SDRAM Buffer Memory: 96K Bytes

Features :

- Ideal for ETTH deployments
- DHCP Client / Server

L2 Metro Access Gateway

EC3805F

802.1Q VLAN | IGMP Proxy | IGMP Snooping

Physical Configuration :

- Fixed Ports : 1 x 100Base-BX + 4 x 100Base-TX ports
- Dimension (HxWxD) cm. : 2.8 x 15 x 9.8
- Weight : 0.2kg

Performance :

- MAC Address Table Size : 2K
- SDRAM Buffer Memory: 96K Bytes

Features :

- Ideal for FTTH deployments with distance up to 2km length
- DHCP Client / Server

EC3802-WDM	* Fiber protection to avoid customer to break the fiber line * Wall-mount designed * Support longer distance up to 15 km by single fiber * IEEE 802.3af support in LAN port * Support IEEE 802.3ah
EC3805 **EC3805F**	* Wall-mount designed * 802.1Q VLAN up to 16 groups * Support IGMP V1, V2, IGMP Proxy and IGMP Snooping * Hardware-based NAT/NAPT * Support Bridge Mode * Scalable rate limit, per port ingress or per egress queue bandwidth control * Supports Qos features by port-based, 802.1p, VLAN, Ethernet Type and IP DiffServ

Metro Aggregation Switch Specification

		ES4612	ES4624-SFP	ES4626-SFP
L2 Features				
Spanning Tree	IEEE 802.1D (STP)	●	●	●
	IEEE 802.1w (RSTP)	●	●	●
	IEEE 802.1s (MSTP)	●	●	●
	802.1Q VLAN	●	●	●
	VLAN Group	255	4K	4K
	Private VLAN	●	●	●
	GVRP	●	●	●
VLAN	MAC-based VLAN		●	●
	IP Subnet VLAN		●	●
	IEEE 802.1v	●	●	●
	Voice VLAN		●	●
	Q-in-Q		●	●
Link Aggregation	IEEE 802.3ad with LACP (Dynamic)	●	●	●
	Static Trunk	●	●	●
	Traffic Load Balancing	●	●	●
Multicast (IGMP) Snooping	IGMP	v1/v2	v1/v2/v3	v1/v2/v3
	Querier Support	●	●	●
	Immediate Leave	●	●	●
	MVR Support	●	●	●
Broadcast Storm Control		●	●	●
Flow Control		●	●	●
Jumbo Frame Support			●	●
L3 Features				
IP Host Table		4K	8K	8K
Static Route		●	●	●
Static ARP		256	1000	1000
Proxy ARP		●	●	●
PBR (Policy-based Routing)			●	●
CIDR (Classless Inter-Domain Routing)		●	●	●
Multi-Netting		●	●	●
Unicast Routing	RIP v1/v2	●	●	●
	OSPF v2	●	●	●
	BGP4		●	●
Multicast Routing	IGMP	●	●	●
	DVMRP	●	●	●
	PIM-DM	●	●	●
	PIM-SM		●	●
VRRP		●	●	●
QoS Features				
Rate Limiting	Ingress	●	●	●
	Egress	●	●	●
DiffServ (RFC2474)			●	●
Priority Queue Scheduling	WRR	●	●	●
	Strict Priority	●	●	●
	Hybrid	●	●	●
CoS	HW Queues	8	8	8
	802.1p	●	●	●
	IP Precedence	●	●	●
	DSCP	●	●	●
	TCP / UDP	●	●	●
	Remarking		●	●
Security				
Port Security (MAC-based)		●	●	●
IEEE 802.1x	Port-based	●	●	●
	MAC-based	●	●	●
ACL	L2 / L3 / L4	●	●	●
IP Source Guard			●	●
RADIUS Authentication (RFC2138)		●	●	●
TACACS+ Authentication		●	●	●
HTTPS and SSL (Secured Web)		●		
SSH v1.5 / v2.0 (Secured Telnet Session)		●	●	●
DHCP Snooping			●	●
Management				
Remote Ping		●	●	●
sFlow			●	●
NTP	SNTP (RFC 2030)	●	●	●
Dual F/W Images		●	●	●
Configuration Download / Upload		●	●	●
Software Upgrade	TFTP (RFC783)	●	●	●
	Xmodem	●	●	●
Software Download	TFTP (RFC783)	●	●	●
	Xmodem	●	●	●
SNMP	Agent	v1 / v2c / v3	v1 / v2c / v3	v1 / v2c / v3
Management Access Filtering	SNMP	●	●	●
	WEB	●	●	●
	Telnet	●	●	●
RMON	RMON I (1,2,3, & 9 groups)	●	●	●
BootP		●	●	●
DHCP	Client	●	●	●
	Relay	●	●	●
	Option 82		●	●
	Server		●	●
Event / Error Log	Local Flash	●	●	●
	Remote Server via System Log (RFC3164)	●	●	●
	SMTP (RFC 821)	●	●	●
DNS	Proxy	●	●	●
Port Mirroring	Many to one	●	●	●
IP Clustering			●	●
IPv6 Features				
IPv4/IPv6 Dual Protocol Stack			●	●
IPv6 Address Types	Unicast		●	●
IPv6 Tunneling	Multicast		●	●
	Manually Configured Tunnel		●	●
	Automatic 6 to 4 Tunnel		●	●
	Automatic ISATAP Tunnel		●	●
IPv6 Routing	Static Route		●	●
	RIP-NG		●	●
	OSPFv3		●	●
	BGP4+		●	●
IPv6 Multicast	MLD v1/v2 Snooping		●	●
	MLD v1		●	●
	MLD v2		●	●
	PIM-SM		●	●
	PIM-DM		●	●
HTTP over IPv6			●	●
IPv6 Ping/tracert			●	●
IPv6 Telnet Support			●	●
IPv6 Syslog Support			●	●
IPv6 SNTP Support			●	●
IPv6 FTP/TFTP Support			●	●
IPv6 ACL	L2 / L3 / L4		●	●

* Note: Edge-Core reserves the right to make changes to product specifications without notices

Metro Access Switch Specification

		ES3528	ES3528-WDM	ES3528M-SFP
L2 Features				
Spanning Tree	IEEE 802.1D (STP)	●	●	●
	IEEE 802.1w (RSTP)	●	●	●
	IEEE 802.1s (MSTP)	32 Instance	32 Instance	8 instance
	Spanning Tree Fast Forward	●	●	●
	BPDU Filtering	●	●	●
	BPDU Forward	●	●	●
	Root Guard	●	●	
VLAN	802.1Q VLAN	●	●	●
	VLAN Group	4K VLANs, 4K VLAN ID	4K VLANs, 4K VLAN ID	256 VLANs 4K VLAN ID
	Port-based	●	●	●
	Voice VLAN			●
	Private VLAN	Traffic Segmentation	Traffic Segmentation	isolated VLAN
	GVRP	127 VLANs	127 VLANs	256 VLANs
	IEEE 802.1v	●	●	●
	Q-in-Q	●	●	●
Link Aggregation	IEEE 802.3ad with LACP (Dynamic)	●	●	●
	Static Trunk	●	●	●
	Traffic Load Balancing	●	●	●
Multicast (IGMP) Snooping	IGMP	v1 / v2 / v3, 256 groups	v1 / v2 / v3,256 groups	v1 / v2 / v3
	Querier Support	●	●	●
	Immediate Leave	●	●	●
	IGMP Filtering	●	●	●
	IGMP Throttling	●	●	●
	IGMP Leave Proxy	●	●	●
	MVR Support	●	●	●
Port Mirroring	One to One	●	●	●
	Many to One			●
Storm Control	Broadcast	●	●	●
	Multicast	●	●	●
	Un-known Unicast	●	●	
Flow Control (Pause/Back pressure)		●	●	●
Jumbo Frame Support		9k	9k	10k
QoS Features				
Rate Limiting		1) Per Port-based 2) Per Port-based Per Queue 3) 64kbps granularity	1) Per Port-based 2) Per Port-based Per Queue 3) 64kbps granularity	1) Per Port-based 2) Per Port-based Per Queue 3) 64kbps granularity
DiffServ (RFC2474)		●	●	●
Priority Queue Scheduling	WRR	●	●	●
	Strict Priority	●	●	●
	Hybird	●	●	●
CoS	HW Queues	8	8	4
	802.1p	●	●	●
	IP Precedence	●	●	●
	DSCP	●	●	●
	TCP / UDP	●	●	●
	ACL			●
	VLAN	●	●	●
Security				
Port Security (MAC-based)	Static	●	●	●
	Dynamic	●	●	●
IEEE 802.1x	Port-based	●	●	●
	Encryption	●	●	●
ACL	L2 / L3 / L4	●	●	●
IP Source Guard		●	●	●
RADIUS (RFC2138)	Authentication	●	●	●
	Accounting			●
	Authorization			●
TACACS+	Authentication	●	●	●
	Accounting			●
	Authorization			●
	3.0	●	●	●
MAC Based Authentication				●
HTTPS and SSL (Secured Web)		●	●	●
SSH v1.5 / v2.0 (Secured Telnet Session)		●	●	●
UserName / Password Authentication		●	●	●
DHCP Snooping		●	●	●
Management				
Command Line Interface (CLI)		●	●	●
Web Interface		●	●	●
Telnet (RFC854)		●	●	●
Remote Ping		●	●	●
NTP	SNTP (RFC2030)	●	●	●
	NTP (RFC1305)			●
Dual F/W Images		●	●	●
Configuration Download / Upload		●	●	●
Firmware Upgrade	TFTP (RFC783)	●	●	●
	Xmodem	●	●	●
Firmware download	TFTP (RFC783)	●	●	●
	Xmodem	●	●	●
SNMP	Agent	v1 / v2c / v3	v1 / v2c / v3	v1 / v2c / v3
Management Access Filtering	SNMP	●	●	●
	WEB	●	●	●
	Telnet	●	●	●
RMON	RMON I (1,2,3, & 9 groups)	●	●	●
	RMON II (Group 19)	●	●	●
DHCP	Client	●	●	●
	Option 82	●	●	●
Event / Error Log	Local Flash	●	●	
	Remote Server via System Log (RFC3164)	●	●	
	SMTP (RFC 821)	●	●	●
DNS		●	●	
IEEE802.3ah		●	●	
IP Clustering				●
LLDP				●

* Note: Edge-Core reserves the right to make changes to product specifications without notices

Chassis, L2/3/4 GE & FE Managed Switch Overview

Edge-Core provides a full range of managed switches to fulfill different deployment requirements. These switches offer a complete set of advanced software features and a range of configurations for different size networking environment installation requirements for enterprises and SMBs.

In addition to feature-rich L2/3/4 features, Edge-Core managed switches also emphasize scalability and flexibility for future network expansion. Edge-Core's full-ranged managed switch solution features the following benefits:

- Different interfaces (Fiber/Copper) for different network needs
- Different uplinks (10G/GE/FE) support different network capacity needs
- Comprehensive QoS and security functions
- IP and hardware stacking functions to achieve maximum network scalability
- RIP and OSPF, BGP advanced routing features to fit to different network needs (Chassis/L3 switches)
- Hot-swappable modules, power supplies and fans to provide superior redundancy (Chassis switches)
- Versatile web management interfaces for convenient system control and maintenance

Edge-Core has implemented two essential technologies to strengthen the scalability and flexibility advantages.

- **Hardware Stacking: (L2 GE Managed Switch ES4626F/ES4650F)**

  Edge-Core implements unique hardware stacking technology on its L3 GE managed switches. These switches can each stack up to 8 units (ES4626F) or 4 units (ES4650F), resulting in port densities of up to 192 10/100/1000 ports and 16 10G ports via the integrated stacking ports, no extra stacking module is needed. Meanwhile, the stacked units can be managed as a single entity with one single IP address. These Edge-Core stacking switches allow the implementation of hardware-stacking and cross-stack trunking to best maximize network capacity and redundancy.

- **IPv6 : Core Chassis Switch (ES4704BD/ES4710BD), L3 GE Managed Switch (ES4626/ES4650), and L2/L4 GE Managed Switch (ES4524D/ES4548D)**

IPv6 is a suite of protocols and standards developed by the Internet Engineering Task Force (IETF) to address the following issues :

- The recent exponential growth of the Internet and the impending exhaustion of the IPv4 address space
- The ability of Internet backbone routers to maintain large routing tables
- The need for simpler configuration
- The requirement for security at the IP level
- The need for better support for real-time delivery of data (QoS)

This new version incorporates many of the concepts proposed to update the outdated IPv4 protocol while being intentionally designed for minimal impact on upper and lower layer protocols by avoiding the arbitrary addition of new features.

With millions of devices become IP aware, the need for increased network addressing for plug-and-play networking can only be addressed by IPv6. Currently, IPv6 has already been accepted by numerous governments, service providers and educational backbone deployments as the best solution to meet the increasing IP demand.

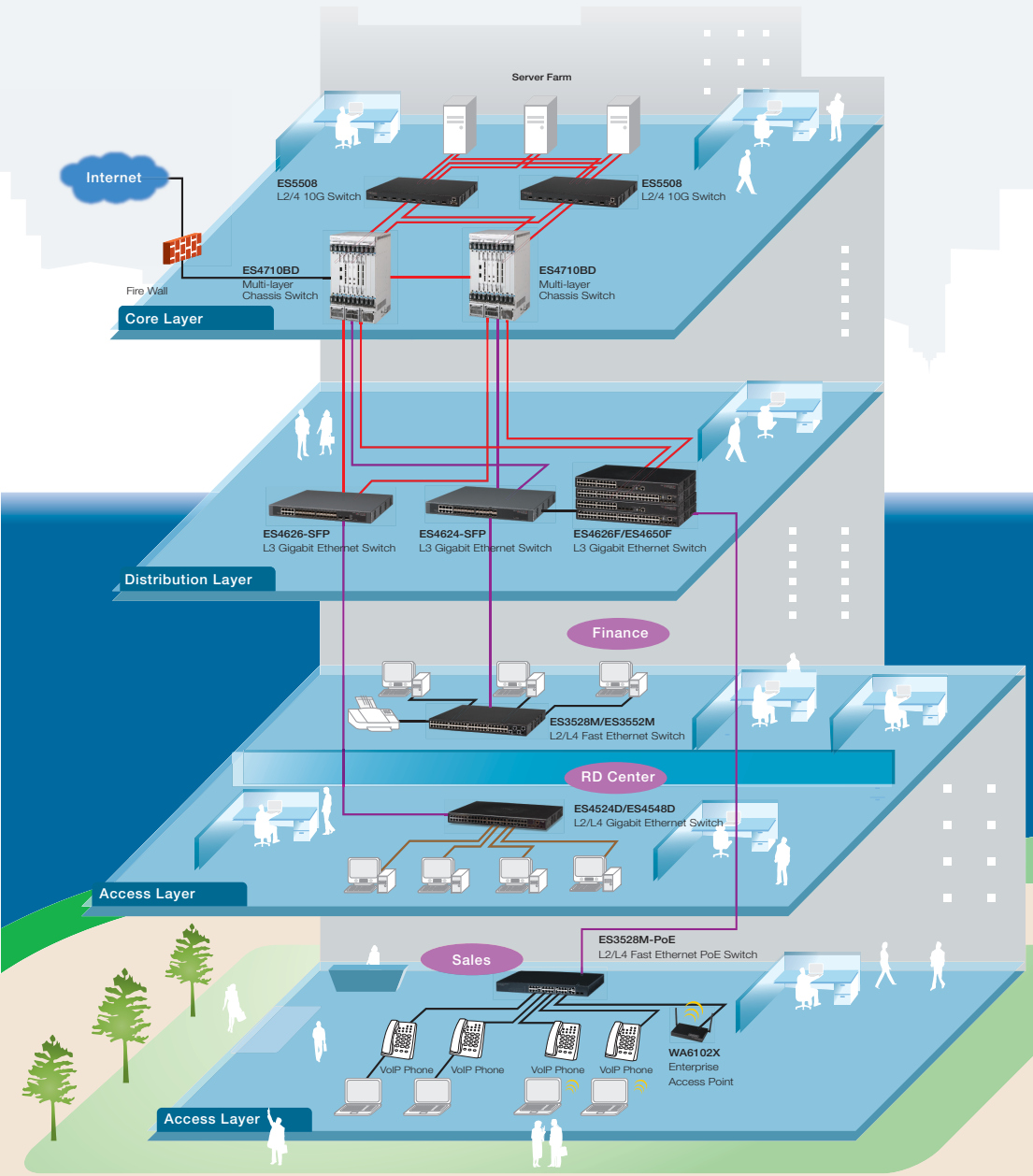
IPv6 protocol has the following features :

- New header format and large address space
- Efficient and hierarchical addressing and routing infrastructure
- Stateless and stateful address configuration
- Built-in security
- Better support for Quality of Service (QoS)
- Extensibility

Edge-Core provides the following enhanced features for the deployment of IPv6 :

- Dual-stacking: Allows IPv4 and IPv6 to co-exist in the same device and networks
- Tunneling : Allows an isolated host or network to "tunnel" through existing IPv4 infrastructure carrying IPv6 packets
- Routing : RIP-ng, OSPF v3, BGP4+

Enterprise Switch Solution



Core Layer Network

* Redundant and resilient design ensures high availability operation for data center network
* Robust L3 routing features (OSPF, BGP4) for demands in various scenarios
* Industry standard protocol features to have higher interoperability with existing equipments
* Advanced QoS to satisfy requirements and applications in different levels
* Comprehensive security protects the core network and data security by different permissions

Distribution Layer Network

* Flexibility port interfaces (copper/fiber) in single device for variable scenarios
* High reliability/resilient routing features can do the fast recovery to avoid the service disruption
* Four 10G ports to provide non-blocking traffic forwarding
* Ease of management to manage up to 36 access layer switches by single IP address
* Superior QoS and advanced security to satisfy the multi-play applications in the future

Access Layer Network

* IPv6 enabled to future-proof enterprise data network
* Gigabit Ethernet provides the higher bandwidth to meet new and evolving network demands (Gigabit to the Desktop)
* Comprehensive security to do the first-line protections which protect important information, and keep unauthorized people off the network
* Superior QoS via granular rate control, complete differential services feature to ensure the traffic is classified and prioritized for multiple applications

Network Positioning

LAN Core Switches

Chassis & I/0 Module

ES4704BD

ES4710BD

L2/L4 10G Ethernet Standalone Switch

ES5508

LAN Distribution Switches

L3 SFP Metro Aggregation Switch

ES4612

ES4624-SFP

ES4626-SFP

L3 Gigabit Ethernet Stackable Switch

ES4626F

ES4650F

L3 Gigabit Ethernet Standalone Switch

ES4626

ES4650

L3 Fast Ethernet Standalone Switch

ES3628EA

LAN Edge Switches

L2/L4 Gigabit Ethernet PoE Switch

ES4524M-PoE

L2/L4 Gigabit Ethernet Standalone Switch

ES4524D

ES4548D

ES4528V

L2/L4 Fast Ethernet PoE Switch

ES3528M-PoE

L2/L4 Fast Ethernet Stackable Switch

ES3528MS

ES3552MS

L2/L4 Fast Ethernet Standalone Switch

ES3510

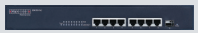
ES3526XA

ES3528M

ES3552M

L2 Gigabit Ethernet Web Smart Switch

ES4324

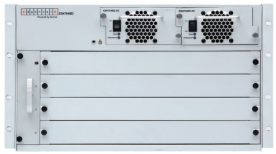


ES4308-PoE

LAN Core Switch

4 Slots L3 Chassis Switch

ES4704BD



IPv6 | 4-Slot | 10GE | Routing | L3 Multicast | Hot Swappable | Redundancy | Dual Power Supply | QoS | Management

Physical Configuration :

- Chassis Slot : 4
- Management Modules
  - EM4704BD-M12GT12GX1XG
  - EM4704BD-M44GT
- I/O Modules
  - EM4700BD-8GC16GX
  - EM4700BD-8GC16GX2XG
  - EM4700BD-12GT12GC
  - EM4700BD-12GT12GC2XG
  - EM4700BD-24TX4GC
  - EM4700BD-48GT
  - EM4700BD-48GX-SFP
  - EM4700BD-4XFP
- Dimension (HxWxD) cm. : 26.6 x 44.5 x 42.1
- Weight : 30Kg
- Slot for Redundant Power Supply
- Out-of-Band Mgmt Console Port
- Out-of-Band Mgmt FE Port

Performance :

- MAC Address Table Size : 16K/module
- Switching Capacity : 160Gbps
- Forwarding Rate : 119Mpps

Agent

EM4704BD-M12GT12GX1XG
L3 Management Module with 12 x 1000Base-X Combo GE (RJ45 or SFP) + 12 x 1000Base-T + 1 x 10G XFP ports

EM4704BD-M44GT
L3 Management Module with 44 x 1000Base-T ports

Accessory

EM4704BD-AC
EM4704BD 110/220V AC Power Supply

10 Slots L3 Chassis Switch

ES4710BD

IPv6 | 10-Slot | 10GE | Routing | L3 Multicast | Hot Swappable | Triple Power Supply | Redundancy | QoS | Management

Physical Configuration :

- Chassis Slot : 10
- Management Modules
  - ES4710BD-Agent
- I/O Modules
  - EM4700BD-8GC16GX
  - EM4700BD-8GC16GX2XG
  - EM4700BD-12GT12GC
  - EM4700BD-12GT12GC2XG
  - EM4700BD-24TX4GC
  - EM4700BD-48GT
  - EM4700BD-48GX-SFP
  - EM4700BD-4XFP
- Dimension (HxWxD) cm. : 79.7 x 43.6 x 47.8
- Weight : 65Kg
- Slot for Redundant Power Supply
- Out-of-Band Mgmt Console Port
- Out-of-Band Mgmt FE Port

Performance :

- MAC Address Table Size : 16K/module
- Switching Capacity : 320Gbps
- Forwarding Rate : 238Mpps

Agent

EM4710BD-Agent
EM4710BD-Agent Layer 3 Management Module

Accessory

EM4710BD-AC
EM4710BD 110/220V AC Power Supply

I/O Modules

EM4700BD-12GT12GC
12 x 1000Base-T (RJ-45) + 12 x Gigabit combo (RJ45/SFP) ports

EM4700BD-8GC16GX
8 x Gigabit combo (RJ-45/SFP) + 16 x 1000Base-X SFP Module

EM4700BD-24TX4GC
24 x 100BASE-TX + 4 x Gigabit Combo (RJ45/SFP) ports

EM4700BD-4XFP
4 x 10G XFP Ports

EM4700BD-12GT12GC2XG
12 x 1000Base-T (RJ-45) + 12 x Gigabit combo (RJ-45/SFP) + 2 x 10G XFP ports

EM4700BD-8GC16GX2XG
8 x Gigabit combo (RJ-45/SFP) + 16 x 1000Base-X SFP Module + 2 x 10G XFP ports

EM4700BD-48GT
48 x 1000Base-T Module

ES4704BD

ES4710BD

* Dual management modules and system components for redundancy
* Hot swappable components for field upgrade
* Various network interface for scalability and flexibility
* Multiple Layer 3 features for IP routing and multicast
* Advanced QoS for triple-play services
* High performance network security and management capabilities
* IPv6 management and routing for future network

LAN Core Switch

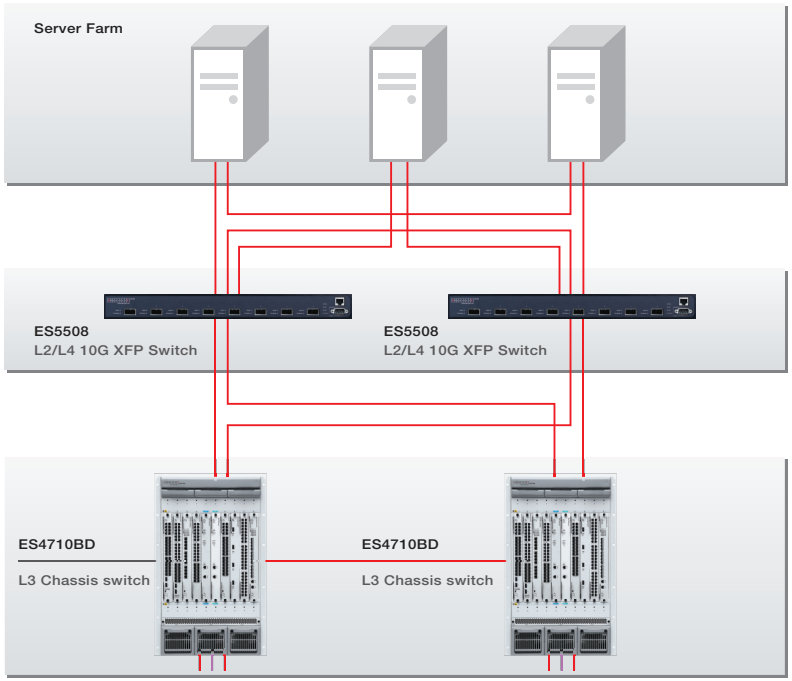
L2/L4 10 Gigabit Ethernet XFP Switch
ES5508

8x10GE QoS

Physical Configuration :
- Fixed Ports : 8 x 10G XFP
- Dimension (HxWxD) cm. : 1 RU (4.4 x 44 x 41)
- Weight : 5.56Kg
- Connector for Redundant Power Supply
- Out-of-Band Mgmt Console Port
- Out-of-Band Mgmt FE Port
- Flash Memory : 32MB
- SDRAM for CPU : 128MB
- Packet Buffer : 256KB

Performance :
- MAC Address Table Size : 8K
- Switching Capacity : 160Gbps
- Forwarding Rate : 119.04Mpps

ES5508	* 10G XFP for aggregation * Enhanced network security and management capabilities * Advanced QoS features for triple play * Enhanced scalability and availability features



LAN Distribution Switch

L3 Gigabit Ethernet Stackable Switch
ES4626F

2x10GE 8 Units Hardware Stacking Routing L3 Multicast QoS Jumbo Frame

Physical Configuration :
- Fixed Ports : 20 x 1000BASE-T + 4 Gigabit Combo (RJ-45/SFP) + 2 stacking ports
- Expansion Slots : 2
- Optional Module: EM4626H-XG-XFP
- Dimension (HxWxD) cm : 1 RU (4.4 x 44 x 33)
- Weight : 3.72Kg
- Flash Memory : 64MB
- SDRAM for CPU : 256MB
- Packet Buffer : 2MB

Performance :
- MAC Address Table Size : 16K
- Switching Capacity : 128Gbps
- Forwarding Rate : 95.232Mpps

I/O Modules

EM4626H-XG-XFP
10G uplink optional module

L3 Gigabit Ethernet Stackable Switch
ES4650F

2x10GE 8 Units Hardware Stacking Routing L3 Multicast QoS Jumbo Frame

Physical Configuration :
- Fixed Ports : 44 x 1000BASE-T + 4 Gigabit Combo (RJ-45/SFP) + 2 stacking ports
- Expansion Slots : 2
- Optional Modules : EM4626H-XG-XFP
- Dimension (HxWxD) cm. : 1 RU (4.4 x 44 x 33)
- Weight : 4.34Kg
- Flash Memory : 64MB
- SDRAM for CPU : 256MB
- Packet Buffer : 2MB

Performance :
- MAC Address Table Size : 16K
- Switching Capacity : 176Gbps
- Forwarding Rate : 130.944Mpps

I/O Modules

EM4626H-XG-XFP
10G uplink optional module

L3 Fast Ethernet Standalone Switch
ES3628EA

Routing L3 Multicast QoS Standalone IP Clustering Support RPS Jumbo Frame

Physical Configuration :
- Fixed Ports : 24 x 100BASE-TX + 2 x 1000BASE-T + 2 x 1000BASE-X SFP ports
- Dimension (HxWxD) cm. : 1 RU (4.4 x 44 x 23)
- Weight : 3.1Kg
- Connector for Redundant Power Supply
- Out-of-Band Mgmt Console Port
- Flash Memory : 32MB
- SDRAM for CPU : 128MB
- Packet Buffer : 32MB

Performance :
- MAC Address Table Size : 16K
- Switching Capacity : 12.8Gbps
- Forwarding Rate : 9.52Mpps

ES4626F **ES4650F**	* 2 x 10GE expansion slot * 10Gbps of stacking bandwidth with resilient stacking * Hardware stacking capability for single IP management * Superior IP routing capability * Enhanced network security and management capabilities * Advanced QoS features for triple play
ES3628EA	* VLAN Stacking (Q-in-Q) to achieve L2 VPN Network * Routing capabilities at the aggregation of the network * Advanced QoS features for triple play * Enhanced network security and management capabilities

LAN Distribution Switch

L3 Gigabit Ethernet Standalone Switch
ES4626

Physical Configuration :
- Fixed Ports : 20 x 1000BASE-T + 4 x Gigabit Combo (RJ45 / SFP) + 2 x 10G XFP +2x 10G ports
- Expansion Slots : 2
- Optional Modules : EM4626H-XG-XFP
- Dimension (HxWxD) cm. : 1 RU (4.4 x 44 x 33)
- Weight : 3.72Kg
- Out-of-Band Mgmt Console Port
- Flash Memory : 32MB
- SDRAM for CPU : 128MB
- Packet Buffer : 750KB

Performance :
- MAC Address Table Size : 8K
- Switching Capacity : 128Gbps
- Forwarding Rate : 95.232Mpps

I/O Modules

EM4626H-XG-XFP
10G uplink optional module

IPv6 | 2x10GE | Routing | IP Clustering | Q-in-Q | QoS | L3 Multicast | BGP4 | OSPF

L3 Gigabit Ethernet Standalone Switch
ES4650

Physical Configuration :
- Fixed Ports : 44 x 1000BASE-T + 4 x Gigabit Combo (RJ45 / SFP) + 2 x 10G XFP +2x 10G ports
- Expansion Slots : 2
- Optional Modules : EM4626H-XG-XFP
- Dimension (HxWxD) cm. : 1 RU (4.4 x 44 x 33cm)
- Weight : 4.34Kg
- Out-of-Band Mgmt Console Port
- Flash Memory : 32MB
- SDRAM for CPU : 128MB
- Packet Buffer : 750KB

Performance :
- MAC Address Table Size : 8K
- Switching Capacity : 176Gbps
- Forwarding Rate : 130.944Mpps

I/O Modules

EM4626H-XG-XFP
10G uplink optional module

IPv6 | 2x10GE | Routing | IP Clustering | Q-in-Q | QoS | L3 Multicast | BGP4 | OSPF

ES4626
ES4650

* 2 x 10GE XFP expansion slots
* IP Clustering for single IP management (Maximum 24 units)
* Superior IP routing capability
* Enhanced network security and management capabilities
* Advanced QoS features for triple play
* Layer 2 and Layer 3 multicast features
* IPv6 management and routing for future network

LAN Edge Switch

L2 Gigabit Ethernet Standalone Switch
ES4524D

Physical Configuration :
- Fixed Ports : 20 x 1000BASE-T + 4 Gigabit Combo (RJ45 / SFP) ports
- Dimension (HxWxD) cm. : 1 RU (4.4 x 44 x 33.1)
- Weight : 3.72Kg
- Connector for Redundant Power Supply
- Out-of-Band Mgmt Console Port
- Flash Memory : 16MB
- SDRAM for CPU : 64MB
- Packet Buffer : 750KB

Performance :
- MAC Address Table Size : 8K
- Switching Capacity : 48Gbps
- Forwarding Rate : 35.7Mpps

IPv6 | Security | QoS | Standalone | Support RPS | Scalability | Q-in-Q | IP Clustering

L2 Gigabit Ethernet Standalone Switch
ES4548D

Physical Configuration :
- Fixed Ports : 44 x 1000BASE-T + 4 Gigabit Combo (RJ45 / SFP) ports
- Dimension (HxWxD) cm. : 1 RU (4.4 x 44 x 33.1)
- Weight : 4.34Kg
- Connector for Redundant Power Supply
- Out-of-Band Mgmt Console Port
- Flash Memory : 16MB
- SDRAM for CPU : 64MB
- Packet Buffer : 1.5MB

Performance :
- MAC Address Table Size : 8K
- Switching Capacity : 96Gbps
- Forwarding Rate : 71.42Mpps

IPv6 | Security | QoS | Standalone | Support RPS | Scalability | Q-in-Q | IP Clustering

ES4524D
ES4548D

* Gigabit Ethernet on all ports
* Enhanced network security and management capabilities
* Advanced QoS features for triple play
* High scalability and availability features
* IPv6 management
* IP Clustering (maximum support 36 units)

LAN Edge Switch

L2/L4 Gigabit Ethernet Standalone Switch
ES4528V

QoS | Security | 24GE Ports | Green Saving

Physical Configuration :
- Fixed Ports: 24 x 1000Base-T + 4 Gigabit Combo (RJ-45 / SFP) ports
- Dimension (HxWxD) cm: 1RU (4.4 x 44 x 17.1)
- Weight: 2Kg
- Flash Memory: 8MB
- SDRAM for CPU: 32MB
- Packet Buffer: 64KB

Performance :
- MAC Address Table Size : 8K
- Switching Capacity : 56Gbps
- Forwarding Rate : 88.3Mpps

L2/L4 Gigabit Ethernet PoE Switch
ES4524M-PoE

QoS | Security | IP Clustering | PoE | 24GE Ports

Physical Configuration :
- Fixed Ports: 22 x 1000Base-T + 2 Gigabit Combo (RJ-45 / SFP) ports
- Dimension (HxWxD) cm. : 1RU (4.3 x 43.8 x 32.8)
- Weight : 4.13Kg
- Out-of-Band Mgmt Console Port
- Flash Memory : 8MB
- SDRAM for CPU : 64MB
- Packet Buffer : 512KB
- PoE: Provide power up to 15.4W available for 12 ports simultaneously

Performance :
- MAC Address Table Size : 8K
- Switching Capacity : 48Gbps
- Forwarding Rate : 35.7Mpps

ES4528V	* Green Saving Technology detects number of active ports and cable length to save power consumption * Enhanced network security and management capabilities * Advanced QoS features for triple play * High scalability and availability features * Jumbo Frame Support
ES4524M-PoE	* IEEE 802.3af compliant * PoE: Provide power up to 15.4W available for 12 ports simultaneously * Total power for PoE support up to 180W * Allow IP Clustering for up to 36 switches using a single IP address * Enhanced network security and management capability * Advanced QoS features for triple play * High scalability and availability features

LAN Edge Switch

L2 Fast Ethernet Standalone Switch
ES3510

Fan-less Design | IP Clustering | Q-in-Q | QoS | Security

Physical Configuration :
- Fixed Ports : 8 x 100BASE-TX + 2 Gigabit Combo (RJ45 / SFP)
- Dimension (HxWxD) cm. : 4.36 x 33.0 x 20.4
- Weight : 1.8kg
- Out-of-Band Mgmt Console Port
- Flash Memory : 8MB
- SDRAM for CPU : 32MB
- Packet Buffer : 256KB

Performance :
- MAC Address Table Size : 8K
- Switching Capacity : 5.6Gbps
- Forwarding Rate : 2.6Mpps

L2 Fast Ethernet Standalone Switch
ES3526XA V2

Fan-less Design | IP Clustering | Q-in-Q | QoS | Security

Physical Configuration :
- Fixed Ports : 24 x 100BASE-TX + 2 Gigabit Combo (RJ45 / SFP) ports
- Dimension (HxWxD) cm. : 1 RU (4.3 x 44.0 x 23)
- Weight : 2.7Kg
- Out-of-Band Mgmt Console Port
- Flash Memory : 8MB
- SDRAM for CPU : 64MB
- Packet Buffer : 256KB

Performance :
- MAC Address Table Size : 8K
- Switching Capacity : 8.8Gbps
- Forwarding Rate : 6.6Mpps

L2 Fast Ethernet Standalone Switch
ES3528M

Fan-less Design | IP Clustering | Q-in-Q | QoS | Security

Physical Configuration :
- Fixed Ports : 24 x 100BASE-TX + 4 Gigabit Combo (RJ45 / SFP) ports SFP : 100/1000Mbps
- Dimension (HxWxD) cm. : 1 RU (4.3x44.0x17.1)
- Weight : 2Kg
- Out-of-Band Mgmt Console Port
- Flash Memory : 16MB
- SDRAM for CPU : 64MB
- Packet Buffer : 512KB

Performance :
- MAC Address Table Size : 8K
- Switching Capacity : 12.8Gbps
- Forwarding Rate : 9.52Mpps

L2 Fast Ethernet Stanalone Switch
ES3552M

Fan-less Design | IP Clustering | Q-in-Q | QoS | Security

Physical Configuration :
- Fixed Ports : 48 x 100BASE-TX + 4 Gigabit Combo (RJ45 / SFP) ports
- Dimension (HxWxD) cm. : 1 RU (4.3x44.0x17.1)
- Weight : 2kg
- Out-of-Band Mgmt Console Port
- Flash Memory : 16MB
- SDRAM for CPU : 64MB
- Packet Buffer : 512KB

Performance :
- MAC Address Table Size : 8K
- Switching Capacity : 17.6Gbps
- Forwarding Rate : 13.1Mpps

ES3510 **ES3526XA** **ES3528M** **ES3552M**	* Multiple 10/100/1000 (RJ-45/SFP) uplinks * Enhanced network security and management capabilities * Advanced QoS features for triple play * High scalability and availability features * IP Clustering for single IP management up to 36 units * Fan-less hardware design

LAN Edge Switch

L2/L4 Fast Ethernet PoE Switch
ES3528M-PoE

QoS | Security | PoE

Physical Configuration :
- Fixed Ports : 24 x 100Base-TX + 2 x 1000Base-T + 2 x Gigabit Combo (RJ-45 / SFP) ports
- Dimension (HxWxD) cm. : 1 RU (4.3 x 44 x 17.1)
- Weight : 4.13Kg
- Out-of-Band Mgmt Console Port
- Flash Memory: 8MB
- SDRAM for CPU : 64MB
- Packet Buffer : 4MB
- PoE: Provide power up to 15.4W available for 12 ports (7.5W for 24 ports) simultaneously

Performance :
- MAC Address Table Size : 8K
- Switching Capacity : 12.8Gbps
- Forwarding Rate : 9.5Mpps

L2/L4 Fast Ethernet Stackable Switch
ES3528MS

QoS | Security | IP Stackable | 8 units of Hardware Stacking

Physical Configuration :
- Fixed Ports : 24 x 100Base-TX + 4 x Gigabit Combo (RJ-45 / SFP) port
- Dimension (HxWxD) cm. : 1 RU (4.3 x 44 x 17.1)
- Weight : 2Kg
- Out-of-Band Mgmt Console Port
- Flash Memory : 16MB
- SDRAM for CPU : 64MB
- Packet Buffer : 512KB

Performance :
- MAC Address Table Size : 8K
- Switching Capacity : 12.8Gbps
- Forwarding Rate : 9.5Mpps

L2/L4 Fast Ethernet Stackable Switch
ES3552MS

QoS | Security | IP Stackable | 8 units of Hardware Stacking

Physical Configuration :
- Fixed Ports : 48 x 100Base-TX + 4 x Gigabit Combo (RJ-45 / SFP) port
- Dimension (HxWxD) cm. : 1 RU (4.3 x 44 x 17.1)
- Weight : 2Kg
- Out-of-Band Mgmt Console Port
- Flash Memory : 16MB
- SDRAM for CPU : 64MB
- Packet Buffer : 512KB

Performance :
- MAC Address Table Size : 8K
- Switching Capacity : 17.6Gbps
- Forwarding Rate : 13.1Mpps

ES3528M-PoE	* IEEE 802.3af compliant * PoE support on all ports * Provide PoE up to 15.4W available for 12 ports (7.5W for 24 ports) simultaneously * Total power for PoE support up to 180W * Allow IP Clustering for up to 36 switches using a single IP address * Enhanced network security and management capabilities * Advanced QoS features for triple play * High scalability and availability features
ES3528MS **ES3552MS**	* Hardware-stacking capabilities for single IP management * 4Gbps stacking bandwidth * Enhanced network security and management capabilities * Advanced QoS features for triple play * High scalability and availability features

LAN Edge Web Smart Switch

L2 Gigabit Ethernet Web Smart Switch
ES4324

Green Saving | QoS | Security | AC Power | 24GE Port | Web Management

Physical Configuration :
- Fixed Ports : 20 x 1000BASE-T + 4 Gigabit Combo (RJ45 / SFP) ports
- Dimension (HxWxD) cm. : 1 RU (4.4 x 44x 17.1)
- Weight : 3.72 Kg
- Flash Memory : 2MB
- SDRAM for CPU : 64MB
- Packet Buffer : 400KB

Performance :
- MAC Address Table Size : 8K
- Switching Capacity : 48Gbps
- Forwarding Rate : 35.7Mpps

L2 Gigabit Ethernet Web Smart PoE Switch
ES4308-PoE

Green Saving | QoS | Security | AC Power | 8GE Port | PoE | Web Management

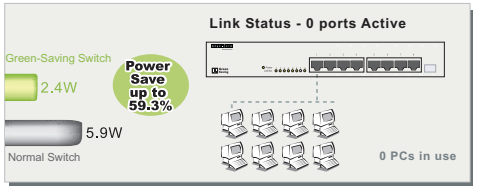
Physical Configuration :
- Fixed Ports : 7 x 1000BASE-T + 1 Gigabit Combo (RJ45 / SFP) ports
- Dimension (HxWxD) cm. : 1 RU (4.4 x 33 x 20.3)
- Weight : 2.06 Kg
- Flash Memory : 2MB
- SDRAM for CPU : 256MB
- Packet Buffer : 144KB
- Provide POE up to 15.4W available for 4 ports (7.5W for 8 ports) simultaneously with the maximum of total PoE delivery up to 70W

Performance :
- MAC Address Table Size : 8K
- Switching Capacity : 16Gbps
- Forwarding Rate : 11.9Mpps

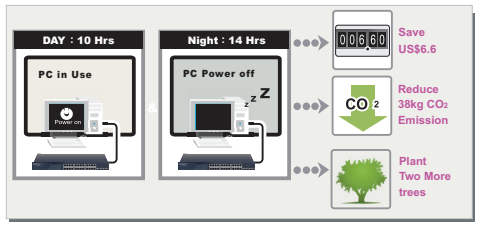
ES4324 **ES4308-PoE**	* Green Saving Technology which detect number of actives ports and cable length to save power consumption up to 59.3% * Spanning Tree Protocol prevents undesirable loops in the network * Easy manageable via web interface * Smart QoS features * Smart security features * Jumbo Frame Support * Ready for IEEE 802.3af of PoE to provide power and data (ES4308-PoE)

Edge-Core Green Saving Technology™

Power Savings by the Number of Active Ports:
Edge-Core Green Saving technology can automatically detect the link status and cut off power for a given port during periods of no link (when a port is disconnected or a PC is turned off). If PCs connected to the switch are turned off, an Edge-Core Green Saving Switch can save up to 59.3% for the power used.

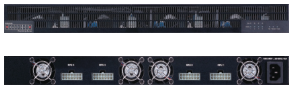


Cut Operating Expenses and Save Mother Earth:
In a standard office scenario, PCs are used for 10 hours a day and powered off 14 hours a day. With constant operation for one year, each Edge-Core Green Saving Switch can save electricity cost up to US$6.6, reduces up to 38kg of CO2 emissions which equals to planting two more trees for mother earth.



Redundant Power Supply

RPS600WA



Physical Configuration :

- Physical Port : 4 x redundant power supply ports
- Dimension (HxWxD) cm : 43.95 x 44 x 32.5
- Weight : 8.66Kg

Performance :

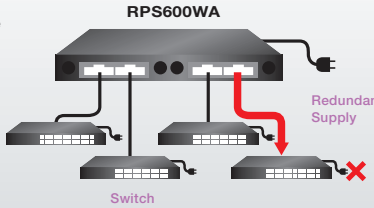
- Power Delivery : Max. output power : 150W / 12V per port
  Max : 2A~14A
- Device Protection : Thermal Protection
  Overload Protection
- Support Devices : ES4524D /ES4548D /ES5508 / ES3628EA

RPS600WA

* Supports power redundancy for up to 4 connected switches
* Max 150W/12V per port
* Easy management
* Dedicated LED on switch for redundant power supply status
* System LEDs located on the front panels
* Supports hot insertion of switch
* 19" rack mountable, 1U height

Edge-Core RPS600WA can automatically back-off when the switch power supply resumes operation to provide a resilient, highly available converged network, providing against :

- Internal power supply failures in switch
- Failure of an AC circuit
- Interruption of utility power



Switch Accessories

ECview Network Management Software

Edge-Core ECview is a powerful SNMP network management software designed for the network administrator to manage network performance, find and solve network problems and plan for network growth. ECview provides a user-friendly interface for managing Edge-Core and third-party SNMP-based network devices. Users can readily monitor the traffic load throughout the network and make necessary changes to avoid major crises ahead of time. ECview is designed around an event-driven architecture, which allows users to define event-handling routines that can automatically manage a wide variety of common network tasks. ECview offers the following features:

- Topology Management
- Configuration Management
- Performance Management
- Event Management
- SNMP MIB Management
- Management Utility

System Requirement:

- OS : Windows 98/2000/2003/XP/NT 4.0
- CPU : Pentium 4, 1.6GH and above
- HDD : 40MB and above
- Memory : 256MB and above
- Video : VGA card and display
- CD-ROM & network card is required

Supported Devices

Product Line	Model Name
L2 Managed Switch	ES3526XA V2 / ES3528M / ES3552M / ES4524D / ES4548D / ES3510 / ES3528M-SFP
L3 Managed Switch	ES4612 / ES4626 / ES4650 / ES4624-SFP / ES4626-SFP / ES3628EA
10G Managed Switch	ES5508
Wireless AP	WA6102X / WA6202A / WA6202AM
Chassis Switch	ES4704BD / ES4710BD
Switch Accessories	EM4710BD-Agent / EM4700BD-2XG-Xenpak / EM4700BD-8GC16GX / EM4700BD-8GC16GX2XG

SFP Transceiver

Fast Ethernet Transceiver

Model	Connect Speed	Wavelength (RX)	Wavelength (TX)	Distance	Connector	Fiber Mode	Devices Supported
ET3203-BX20	100Mbps	1550nm	1310nm	20km	LC	Single-mode	ES3528M/ES3552M/ ES3528M-SFP
ET3203-BX20D	100Mbps	1310nm	1550nm	20km	LC	Single-mode	

Gigabit Ethernet Transceiver

Model	Connect Speed	Wavelength	Distance	Connector	Fiber Mode	Devices Supported
ET4201-SX	1000M	850nm	300m	LC	Multi-mode Fiber	ES4612 / ES4624-SFP / ES4626-SFP / ES3528 /ES3528-WDM / ES3528M-SFP / ES4626 / ES4650 / ES4626F / ES4650F / ES4524D / ES4548D / ES3528M / ES3552M/ ES3510 / ES3526XA V2 / ES3528M / ES3552M / ES4528V / ES4524M-PoE / ES3528MS / ES3552MS / ES4324 / ES4308-PoE
ET4201-LX	1000M	1310nm	10km	LC	Single-mode Fiber	
ET4201-LHX	1000M	1310nm	40km	LC	Single-mode Fiber	
ET4201-ZX	1000M	1550nm	80km	LC	Single-mode Fiber	
ET4201-RJ45	1000M	--	100m	RJ45	---	

Gigabit Ethernet Transceiver

Model	Connect Speed	Wavelength (RX)	Wavelength (TX)	Distance	Connector	Fiber Mode	Devices Supported
ET4203-BX20 (BiDi 1314)	1000M	1490nm	1310nm	20km	LC	Single-mode	ES4612 / ES4624-SFP / ES4626-SFP / ES3528 /ES3528-WDM / ES3528M-SFP / ES4626 / ES4650 / ES4626F / ES4650F / ES4524D / ES4548D / ES3528M / ES3552M/ ES3510 / ES3526XA V2 / ES3528M / ES3552M / ES4528V / ES4524M-PoE / ES3528MS / ES3552MS / ES4324 / ES4308-PoE
ET4203-BX20D (BiDi 1315)	1000M	1310nm	1490nm	20km	LC	Single-mode	
ET4204-BX10 (BiDi 1315)	1000M	1550nm	1310nm	10km	LC	Single-mode	
ET4204-BX10D (BiDi 1315)	1000M	1310nm	1550nm	10km	LC	Single-mode	

XFP Transceiver

10G XFP Transceiver

Model	Connect Speed	Wavelength	Distance	Connector	Fiber Mode	Devices Supported
ET5302-SR	10G	850nm	300m	LC	Multi-mode Fiber	ES4626-SFP / ES5508
ET5302-LR	10G	1310nm	10km	LC	Single-mode Fiber	ES4626 / ES4650 /
ET5302-ER	10G	1550nm	40km	LC	Single-mode Fiber	ES4626-SFP / ES5508

LAN Core Switch Specification

		ES4704BD	ES4710BD	ES5508
L2 Features				
Spanning	IEEE 802.1D (STP)	●	●	●
	IEEE 802.1w (RSTP)	●	●	●
	IEEE 802.1s (MSTP)	●	●	●
	Spanning Tree Fast Forward	●	●	
	BPDU Filtering	●	●	
	Root Guard	●	●	●
VLAN	802.1Q VLAN	●	●	●
	VLAN Group	4K	4K	256 VLANs
	Port-based	●	●	●
	Private VLAN	●	●	
	GVRP	●	●	
	MAC-based	●	●	
	IP subnet Based	●	●	
	IEEE 802.1v	●	●	
	Voice VLAN	●	●	
	VLAN Translation	●	●	
	Q-in-Q	●	●	
Link Aggregation	IEEE 802.3ad with LACP (Dynamic)	●	●	10 GE Ports: 2~8 Links per Trunk; Up to 4 Trunks (including static trunk)
	Static Trunk	●	●	10 GE Ports: 2~8 Links per Trunk; Up to 4 Trunks (including static trunk)
	Traffic Load Balancing	●	●	●
Multicast (IGMP) Snooping	IGMP	v1/v2/v3	v1/v2/v3	●
	Querier Support	●	●	
	Immediate Leave	●	●	
	MVR Support	●	●	
Broadcast Storm Control		●	●	●
Flow Control		●	●	802.3x (Full-duplex), Back-Pressure (Half-duplex)
Jumbo Frame Support		●	●	●
L3 Features				
IP Host Table		Line Card Dependent	Line Card Dependent	
Static Route		●	●	
Proxy ARP		●	●	
PBR(Policy-based Routing)		●	●	
CIDR (Classless Inter-Domain Routing)		●	●	
Multi-Netting		●	●	
Unicast Routing	RIP v1/v2	●	●	
	OSPF v2	●	●	
	BGP4	●	●	
Multicast Routing	IGMP	●	●	
	DVMRP	●	●	
	PIM-DM	●	●	
	PIM-SM	●	●	
VRRP		●	●	
QoS Features				
Rate Limiting	Ingress	●	●	●
	Egress	●	●	●
DiffServ (RFC2474)		●	●	
Priority Queue Scheduling	WRR	●	●	●
	Strict Priority	●	●	●
	Hybrid	●	●	
CoS	HW Queues	8	8	8
	802.1p	●	●	●
	IP Precedence	●	●	●
	DSCP	●	●	●
	TCP / UDP	●	●	●
	ACL	●	●	●
	Remarking	●	●	
Security				
Port Security (MAC-based)		●	●	●
IEEE 802.1x	Port-based	●	●	●
	MAC-based	●	●	
ACL	L2 / L3 / L4	●	●	●
IP Source Guard		●	●	
RADIUS Authentication (RFC2138)	Authentication	●	●	●
	Authorization	●	●	
TACACS+ Authentication	Authentication	●	●	●
HTTPS and SSL (Secured Web)				
SSH v1.5 / v2.0 (Secured Telnet Session)		●	●	●
DHCP Snooping		●	●	●
Management				
Remote Ping		●	●	●
sFlow		●	●	
NTP	SNTP (RFC 2030)	●	●	●
	NTP (RFC1305)			●
Dual F/W Images		●	●	●
Configuration Download / Upload		●	●	●
Firmware Download	TFTP (RFC783)	●	●	●
	Xmodem	●	●	●
Firmware Upgrade	TFTP (RFC783)	●	●	●
	Xmodem	●	●	●
SNMP	Agent	v1, v2c,v3	v1, v2c,v3	v1, v2c,v3
Management Access Filtering	SNMP	●	●	
	WEB	●	●	
	Telnet	●	●	
RMON	RMON I (1,2,3, & 9 groups)	●	●	●
BootP		●	●	
DHCP	Client	●	●	●
	Relay	●	●	
	Option 82	●	●	
	Server	●	●	
Event / Error Log	Local RAM	●	●	
	Remote Server via System Log	●	●	●
	SMTP (RFC 821)			●
DNS		●	●	
Port Mirroring	One to One	●	●	●
	Many to One	●	●	●
IP Clustering		●	●	
IPv6 Features				
IPv6 Tunneling	Manually Configured Tunnel	●	●	
	Automatic 6 to 4 Tunnel	●	●	
	Automatic ISATAP Tunnel	●	●	
IPv6 Routing	Static Route	●	●	
	RIP	●	●	
	OSPF	●	●	
	BGP4+	●	●	
IPv6 Multicast	MLD v1/v2 Snooping	●	●	
	MLD v1	●	●	
	MLD v2	●	●	
	PIM-SM	●	●	
	PIM-DM	●	●	
IPv6 Management	HTTP over IPv6	●	●	
	IPv6 Ping/tracert	●	●	
	IPv6 Telnet Support	●	●	
	IPv6 Syslog Support	●	●	
	IPv6 SNTP Support	●	●	
	IPv6 FTP/TFTP Support	●	●	
IPv6 Security	IPv6 RADIUS+ Support	●	●	
	IPv6 TACACS+ Support	●	●	
IPv6 ACL	L2/L3/L4	●	●	

* Note: Edge-Core reserves the right to make changes to product specifications without notices

LAN Distribution Switch Specification

		ES4626	ES4650	ES4626F	ES4650F	ES3628EA
Stacking Features						
No. of Units/Ports Supported in a Stack		8	8	8	8	
Stacking Bandwidth		10G	10G	10G	10G	
Resilient Stacking		●	●	●	●	
Hot-Swappable of Stacked Unit		●	●	●	●	
Backup Stack Master Election		●	●	●	●	
Stack wide trunking		●	●	●	●	
Stack wide port mirroring		●	●	●	●	
L2 Features						
Spanning Tree	IEEE 802.1D (STP)	●	●	●	●	●
	IEEE 802.1w (RSTP)	●	●	●	●	●
	IEEE 802.1s (MSTP)	●	●	●	●	●
	BPDU Filtering	●	●	●	●	
	BPDU Forward					4K
	Root Guard	●	●	●	●	
VLAN 802.1Q	VLAN	●	●	●	●	●
	VLAN Group	4K	4K	4K	4K	4K
	Private VLAN	●	●	●	●	●
	GVRP	256 VLANs	256 VLANs	256 VLANs	256 VLANs	256 VLANs
	MAC-based VLAN	●	●	●	●	●
	IP Subnet VLAN	●	●	●	●	
	IEEE 802.1v	●	●	●	●	●
	Voice VLAN	●	●	●	●	
	Q-in-Q	●	●	●	●	●
Link Aggregation	IEEE 802.3ad with LACP (Dynamic)	●	●	●	●	●
	Static Trunk	●	●	●	●	●
	Traffic Load Balancing	●	●	●	●	●
Multicast (IGMP) Snooping	IGMP	v1/v2/v3	v1/v2/v3	v1/v2	v1/v2	v1/v2
	Querier Support	●	●	●	●	●
	Immediate Leave	●	●	●	●	●
	MVR Support					●
Port Mirroring	One to One	●	●	●	●	●
	Many to One	●	●	●	●	●
Broadcast Storm Control		●	●	●	●	●
Flow Control		●	●	●	●	●
Jumbo Frame Support		●	●	●	●	●
L3 Features						
IP Host Table		2K	2K	8K	8K	4K
IP Net Table				12K	12K	
Static Route		●	●	●	●	●
Static ARP		1000 Entries	1000 Entries	256	256	1000 Entries
Proxy ARP		●	●	●	●	●
CIDR (Classless Inter-Domain Routing)						●
Multi-Netting						●
Unicast Routing	RIP v1/v2	●	●	●	●	●
	OSPF v2	●	●	●	●	●
	BGP4					●
Multicast Routing	DVMRP	●	●			●
	PIM-DM	●	●			●
	PIM-SM	●	●			●
VRRP		●	●	●	●	●
QoS Features						
Rate Limiting	Ingress	●	●	●	●	●
	Egress	●	●	●	●	●
DiffServ (RFC2474)		●	●	●	●	●
Priority Queue Scheduling	WRR	●	●	●	●	●
	Strict Priority	●	●	●	●	●
	Hybrid					●
CoS	HW Queues	●	●	●	●	●
	802.1p	●	●	●	●	●
	IP Precedence	●	●	●	●	●
	DSCP	●	●	●	●	●
	TCP / UDP	●	●	●	●	●
	ACL					●
	Remarking					●
Security						
Port Security (MAC-based)		●	●	●	●	●
IEEE 802.1x	Port-based	●	●	●	●	●
	MAC-based	●	●			●
ACL	L2 / L3 / L4	●	●	●	●	●
IP Source Guard						●
RADIUS (RFC2138)	Authentication	●	●	●	●	●
	Accounting	●	●	●	●	●
	Authorization	●	●	●	●	●
TACACS+	Authorization	●	●	●	●	
	Authentication	●	●	●	●	●
	Accounting	●	●	●	●	●
HTTPS and SSL (Secured Web)		●	●	●	●	
SSH v1.5 / v2.0 (Secured Telnet Session)		●	●	●	●	●
DHCP Snooping		●	●	●	●	●
Management						
Remote Ping		●	●	●	●	●
NTP	SNTP (RFC 2030)	●	●	●	●	●
Dual F/W Images		●	●	●	●	●
Configuration Download / Upload		●	●	●	●	●
Software Download / Upgrade	TFTP (RFC783)	●	●	●	●	●
	Xmodem	●	●	●	●	●
SNMP	Agent	v1, v2c,v3	v1, v2c,v3	v1, v2c,v3	v1, v2c,v3	v1, v2c,v3
Management Access	SNMP	●	●	●	●	●
	WEB	●	●	●	●	●
	Telnet	●	●	●	●	●
RMON	RMON I (1,2,3, & 9 groups)	●	●	●	●	●
BootP	Client	●	●	●	●	●
DHCP	Client	●	●	●	●	●
	Relay	●	●	●	●	●
	Option 82					●
	Server	●	●	●	●	●
Event / Error Log	Local RAM	2M	2M	2M	2M	2M
	Remote Server via System Log (RFC3164)	●	●	●	●	●
DNS				Client,Proxy	Client,Proxy	●
IP Stacking						●
IPv6 Features						
IPv6 Management	SNMP over IPv6	●	●	●	●	
	IPv6 Telnet Support	●	●	●	●	
	IPv6 SNTP Support	●	●	●	●	
	Remote IPv6 Ping	●	●	●	●	
	HTTP over IPv6	●	●	●	●	
	IPv6 Syslog Support	●	●	●	●	
IPv6 Security	IPv6 RADIUS+ Support	●	●	●	●	
	IPv6 TACACS+ Support	●	●		●	
IPv6 ACL	L2/L3/L4	●	●	●	●	
IPv6 Tunneling	Manually Configured Tunnel	●	●			
	Automatic 6 to 4 Tunnel	●	●			
	Automatic ISATAP Tunnel	●	●			
IPv6 Routing	Static Route	●	●			
	RIP	●	●			
	OSPF	●	●			
	BGP4+	●	●			
IPv6 Multicast	MLD v1/v2 Snooping	●	●			
	MLD v1	●	●			
	MLD v2	●	●			
	PIM-SM	●	●			
	PIM-DM	●	●			

* Note: Edge-Core reserves the right to make changes to product specifications without notices

LAN Edge Switch Specification

		ES4524D	ES4548D	ES4528V
L2 Features				
Spanning Tree	IEEE 802.1D (STP)	●	●	●
	IEEE 802.1w (RSTP)	●	●	●
	IEEE 802.1s (MSTP)	●	●	
	Spanning Tree Fast Forward	●	●	
	Auto Edge			●
VLAN	802.1Q VLAN	●	●	●
	VLAN Group	256 VLANs 4K VLAN ID	256 VLANs 4K VLAN ID	256 VLANs
	Port-based	●	●	●
	Private VLAN	Traffic Segmentation	Traffic Segmentation	●
	GVRP	256 VLANs	256 VLANs	
	IEEE 802.1v	●	●	
	Q-in-Q	●	●	●
Link Aggregation	IEEE 802.3ad with LACP (Dynamic)	GE Ports: 2~8 Links per Trunk; Up to 8 Trunks (FE & GE, including static trunk)	GE Ports: 2~8 Links per Trunk; Up to 8 Trunks (FE & GE, including static trunk)	●
	Static Trunk	GE Ports: 2~8 Links per Trunk; Up to 32 Trunks (FE & GE, including IEEE 802.3ad)	GE Ports: 2~8 Links per Trunk; Up to 32 Trunks (FE & GE, including IEEE 802.3ad)	●
Multicast (IGMP) Snooping	Traffic Load Balancing	●	●	●
	IGMP Snooping	v1, v2	v1, v2	v1, v2
	Querier Support	●	●	●
	Immediate Leave	●	●	●
	IGMP Filtering	●	●	●
	IGNP Leave Proxy	●	●	●
	MVR Support	●	●	
Port Mirroring	One to One	●	●	●
	Many to One	●	●	●
Broadcast Storm Control		●	●	●
Flow Control		802.3x (Full-duplex), Back-Pressure (Half-duplex)	802.3x (Full-duplex), Back-Pressure (Half-duplex)	802.3x (Full-duplex), Back-Pressure (Half-duplex)
Jumbo Frame Support		●	●	●
QoS Features				
Rate Limiting		GE Ports: (Ingress / Egress) Range (1-1000Mbps), Granularity (1Mbps)	GE Ports : (Ingress / Egress) Range (1-1000Mbps), Granularity (1Mbps)	GE Ports : (Ingress / Egress) Range (0.5~1000Mbps),Granularity (0.5Mbps)
DiffServ (RFC2474)		●	●	Ingress Traffic Policing Only
Priority Queue Scheduling	WRR	●	●	●
	Strict Priority	●	●	●
CoS	HW Queues	8	8	4
	802.1p	●	●	●
	IP Precedence	●	●	●
	DSCP	●	●	●
	TCP / UDP	●	●	●
	ACL			●
	VLAN			●
	Remarking	●	●	●
Security				
Port Security (MAC-based)	Static	●	●	●
	Dynamic	●	●	
IEEE 802.1x	Port-based	●	●	●
	MAC-based	●	●	●
ACL	L2 / L3 / L4	●	●	●
IP Source Guard		●		
RADIUS (RFC2138)	Authentication	●	●	●
	Accounting	●	●	●
	Authorization	●	●	
TACACS+	Authentication	●	●	
	Accounting	●	●	
	Authorization	●	●	
	3.0			
HTTPS and SSL (Secured Web)		●	●	●
SSH v1.5 / v2.0 (Secured Telnet Session)		●	●	V2.0 only
UserName / Password Authentication	Local Authenticatoin	●	●	only one use / password
	Remote Authentication	●	●	only RADIUS
Management Access Filtering	SNMP	●	●	●
	WEB	●	●	●
	Telnet	●	●	●
DHCP Snooping		●	●	●
Management				
Command Line Interface(CLI)		●	●	●
Web Interface		●	●	●
Telnet (RFC854)		4 sessions	4 sessions	●
Remote Ping		●	●	●
NTP	SNTP (RFC 2030)	●	●	●
	NTP (RFC 1305)	●	●	
Dual F/W Images		●	●	●
Configuration Download / Upload		multiple copies	multiple copies	●
Software Download / Upgrade	TFTP (RFC783)	●	●	●
	HTTP			●
	Xmodem	●	●	●
SNMP	Agent	v1, v2c, v3	v1, v2c, v3	v1, v2c, v3
Management Access Filtering	SNMP	●	●	●
	WEB	●	●	●
	Telnet	●	●	●
RMON	RMON I (1,2,3 & 9 groups)	●	●	●
BootP	Client	●	●	
DHCP	Client	●	●	●
	Relay	●	●	
	Option 82	●	●	
Event / Error Log	Local Flash	●	●	●
	Remote Server via System Log (RFC3164)	●	●	
	SMTP (RFC 821)	●	●	
DNS		●	●	
IP Clustering		●	●	
IPv6 Features				
IPv6 Management	SNMP over IPv6	●	●	●
	IPv6 Telnet Support	●	●	●
	IPv6 SNTP Support	●	●	●
	IPv6 SMTP Support	●	●	
	Remote IPv6 Ping	●	●	●
	HTTP over IPv6	●	●	●
	IPv6 Syslog Support	●	●	
	IPv6 DNS Resolver	●	●	
IPv6 Security	IPv6 RADIUS+ Support	●	●	
	SSH over IPv6	●	●	●
IPv6 ACL	L2/L3/L4	●	●	L3 only
IPv6 QoS	IPv6 DSCP remapping CoS	●	●	

* Note: Edge-Core reserves the right to make changes to product specifications without notices

LAN Edge Switch Specification

		ES3510	ES3526XA	ES3528M	ES3552M
L2 Features					
Spanning Tree	IEEE 802.1D (STP)	●	●	●	●
	IEEE 802.1w (RSTP)	●	●	●	●
	IEEE 802.1s (MSTP)	8 Instance	8 Instance	8 Instance	8 Instance
	Spanning Tree Fast Forward	●	●	●	●
	BPDU Forward			●	●
VLAN	802.1Q VLAN	●	●	●	●
	VLAN Group	256	256	256	256
	Port Based	●	●	●	●
	MAC Based			●	●
	Voice VLAN	●	●	●	●
	Private VLAN	Isolated VLAN	Community, Isolated VLAN	Isolated VLAN	Isolated VLAN
	GVRP	255 VLANs	255 VLANs	255 VLANs	255 VLANs
	IEEE 802.1v	●	●	●	●
	Q-in-Q	●	●	●	●
Link Aggregation	IEEE 802.3ad with LACP (Dynamic)	FE Ports: 2~8 Links per Trunk; Up to 12 Trunks (FE ,including static trunk)	FE Ports: 2~8 Links per Trunk; GE Ports: 2 Links per Trunk; Up to 12 Trunks (FE & GE, including static trunk)	FE Ports: 2~8 Port per Trunk; GE Ports: 4 Port per Trunk; Up to 8 Trunks (FE & GE, including static trunk)	FE Ports: 2~8 Port per Trunk; GE Ports: 4 Port per Trunk; Up to 8 Trunks (FE & GE, including static trunk)
	Static Trunk	FE Ports: 2~8 Port per Trunk;GE Ports: 4 Port per Trunk; Up to 5 Trunks (FE & GE, including static trunk)	FE Ports: 2~8 Links per Trunk; GE Ports: 2 Links per Trunk; Up to 12 Trunks (FE & GE, including IEEE 802.3ad)	FE Ports: 2~8 Port per Trunk; GE Ports: 4 Port per Trunk; Up to 8 Trunks (FE & GE, including static trunk)	FE Ports: 2~8 Port per Trunk; GE Ports: 4 Port per Trunk; Up to 8 Trunks (FE & GE, including static trunk)
	Traffic Load Balancing	●	●	●	●
Multicast (IGMP) Snooping	IGMP	v1, v2	v1, v2	v1, v2	v1, v2
	Querier Support	●	●	●	●
	Immediate Leave	●	●	●	●
	IGMP Filtering	●	●	●	●
	IGMP Throttling	●	●	●	●
	IGNP Leave Proxy	●	●	●	●
	MVR Support	●	●	●	●
Storm Control	Broadcast	●	●	●	●
	Multi-cast	●	●	●	●
	Un-known Unicast	●	●	●	●
Flow Control		802.3x (Full-duplex), Back-Pressure (Half-duplex)	802.3x (Full-duplex), Back-Pressure (Half-duplex)	802.3x (Full-duplex), Back-Pressure (Half-duplex)	802.3x (Full-duplex), Back-Pressure (Half-duplex)
Jumbo Frame Support		●	●	●	●
QoS Features					
Rate Limiting		Granularity (8kbps, level 1-127) (80kbps, level 1-127)	Granularity (8kbps, level 1-127) (80kbps, level 1-127)	FE Ports: (Ingress / Egress) Range (64kbps-100Mbps), Granularity (64kbps); GE Ports: (Ingress / Egress) Range (64-1000Mbps), Granularity (64kbps)	FE Ports: (Ingress / Egress) Range (64kbps-100Mbps), Granularity (64kbps); GE Ports: (Ingress / Egress) Range (64-1000Mbps), Granularity (64kbps)
DiffServ (RFC2474)		●	●	●	●
Priority Queue Scheduling	WRR	●	●	●	●
	Strict Priority	●	●	●	●
	Hybrid	●	●	●	●
CoS	HW Queues	4	4	4	4
	802.1p	●	●	●	●
	IP Precedence	●	●	●	●
	DSCP	●	●	●	●
	TCP / UDP	●	●	●	●
	ACL	●	●	●	●
	Remarking	●	●	●	●
Security					
Port Security (MAC-based)	Static	●	●	●	●
	Dynamic	●	●	●	●
IEEE 802.1x	MAC-based	●	●	●	●
	VLAN Assignment	●	●	●	●
	Guest VLAN	●	●	●	●
ACL	L2 / L3 / L4	●	●	●	●
IP Source Guard		●	●	●	●
RADIUS (RFC2138)	Authentication	●	●	●	●
	Accounting	●	●	●	●
	Authorization	●	●	●	●
TACACS+	Authentication	●	●	●	●
	Accounting	●	●	●	●
	Authorization	●	●	●	●
	3.0	●	●	●	●
HTTPS and SSL (Secured Web)		●	●	●	●
SSH v1.5 / v2.0 (Secured Telnet Session)		●	●	●	●
UserName / Password Authentication	Local Authenticatoin	●	●	●	●
	Remote Authentication	●	●	●	●
Management Access Filtering	SNMP	●	●	●	●
	WEB	●	●	●	●
	Telnet	●	●	●	●
DCHP Snooping		●	●	●	●
ARP Inspection				●	●
Management					
Command Line Interface (CLI)		●	●	●	●
Web Interface		●	●	●	●
Telnet (RFC854)		4 sessions	4 sessions	4 sessions	4 sessions
Remote Ping		●	●	●	●
NTP	SNTP (RFC 2030)	●	●	●	●
	NTP (RFC 1305)		●	●	●
Dual F/W Images		●	●	●	●
Configuration Download / Upload		multiple copies	multiple copies	multiple copies	multiple copies
Software Download / Upgrade	TFTP (RFC783)	●	●	●	●
	Xmodem	●	●	●	●
SNMP	Agent	v1, v2c, v3	v1, v2c, v3	v1, v2c, v3	Yes; v1, v2c, v3
RMON	RMON I (1,2,3, & 9 groups)	●	●	●	●
BootP		●	Client	●	●
DHCP	Client	●	●	●	●
	Relay	●	●	●	●
	Option 82	●	●	●	●
Event / Error Log	Local Flash	●	●	●	●
	Remote Server via System Log (RFC3164)	●	●	●	●
	SMTP (RFC 821)	●		●	●
Port Mirroring	One to One	●	●	●	●
	Many to One	●	●	●	●
IP Clustering		●	●	●	●
LLDP		●	●	●	●
Loop Detection				●	●

* Note: Edge-Core reserves the right to make changes to product specifications without notices

LAN Edge Switch Specification

		ES3528MS	ES3552MS	ES3528M-PoE	ES4524M-PoE
Stacking Features					
No. of Units/Ports Supported in a Stack		8 / 192	8 / 192		
Stacking Bandwidth		4Gbps	4Gbps		
Resilient Stacking		●	●		
Hot-Swappable of Stacked Unit		●	●		
Stack wide trunking		●	●		
Stack wide port mirroring		●	●		
PoE Features					
802.3af for PoE				●	●
Power Consumption				7.5W per port on 24 ports, or max power of 15.4W per port on up to 12 ports simultaneously	7.5W per port on 24 ports, or max power of 15.4W per port on up to 12 ports simultaneously
Power Management				●	●
Power On/Off per Port				●	●
Total System Power				180W	180W
L2 Features					
Spanning Tree	IEEE 802.1D (STP)	●	●	●	●
	IEEE 802.1w (RSTP)	●	●	●	●
	IEEE 802.1s (MSTP)	● (8 Instance)	● (8 Instance)	●	●
	Spanning Tree Fast Forward	●	●	●	●
	BPDU Filtering			●	●
	BPDU Forward	●	●	●	●
	Auto Edge				●
	Root Guard				●
VLAN	802.1Q VLAN	●	●	●	●
	VLAN Group	256 VLANs	256 VLANs	256 VLANs	256 VLANs
	Port Based	●	●	●	●
	MAC Based	●	●		
	Voice VLAN	●	●	●	●
	Private VLAN	● (isolated VLAN)	● (isolated VLAN)	● (isolated VLAN)	●
	GVRP	●	●	●	●
	IEEE 802.1v	●	●	●	●
	Q-in-Q	●	●	●	●
Link Aggregation	IEEE 802.3ad with LACP (Dynamic)	FE Ports: 2~8 Port per Trunk; GE Ports: 4 Port per Trunk; Up to 8 Trunks (FE & GE, including static trunk)	FE Ports: 2~8 Port per Trunk; GE Ports: 4 Port per Trunk; Up to 8 Trunks (FE & GE, including static trunk)	FE Ports: 2~8 Links per Trunk; GE Ports: 4 Port per Trunk; Up to 8 Trunks	FE Ports: 2~8 Port per Trunk; GE Ports: 4 Port per Trunk; Up to 8 Trunks (FE & GE, including static trunk)
	Static Trunk	●	●	●	●
	Traffic Load Balancing	●	●	●	●
Multicast (IGMP) Snooping	IGMP	v1, v2	v1, v2	v1, v2, v3	v1, v2, v3
	Querier Support	●	●	●	●
	Immediate Leave	●	●	●	●
	IGMP Filtering	●	●	●	●
	IGMP Throttling	●	●	●	●
	IGNP Leave Proxy	●	●	●	●
	MVR Support	●	●	●	●
Storm Control	Broadcast	●	●	●	●
	Multi-cast	●	●	●	●
	Un-known Unicast	●	●		
Flow Control	802.3x (Full-duplex)	●	●	●	●
	Back-Pressure (Half-duplex)	●	●	●	●
Jumbo Frame Support		●	●	●	●
QoS Features					
Rate Limiting		FE Ports: (Ingress / Egress) Range (64kbps-100Mbps), Granularity (64kbps); GE Ports: (Ingress / Egress) Range (64-1000Mbps), Granularity (64kbps)	FE Ports: (Ingress / Egress) Range (64kbps-100Mbps), Granularity (64kbps); GE Ports: (Ingress / Egress) Range (64-1000Mbps), Granularity (64kbps)	FE Ports: (Ingress / Egress) Range (64kbps-100Mbps), Granularity (64kbps); GE Ports: (Ingress / Egress) Range (64-1000Mbps), Granularity (64kbps)	FE Ports: (Ingress / Egress) Range (64kbps-100Mbps), Granularity (64kbps); GE Ports: (Ingress / Egress) Range (64-1000Mbps), Granularity (64kbps)
DiffServ (RFC2474)		●	●	●	
Priority Queue Scheduling	WRR	●	●	●	●
	Strict Priority	●	●	●	●
CoS	HW Queues	4	4	4	4
	802.1p	●	●	●	●
	DSCP	●	●	●	●
	ACL	●	●	●	●
	Remarking	●	●	●	
Security					
Port Security (MAC-based)	Static	●	●	●	●
	Dynamic	●	●	●	●
IEEE 802.1x	Port-based	●	●	●	●
	MAC-based				
	VLAN Assignment	●	●	●	●
	Guest VLAN	●	●	●	●
ACL	L2 / L3 / L4	●	●	●	●
IP Source Guard		●	●	●	●
RADIUS (RFC2138)	Authentication	●	●	●	●
	Accounting	●	●	●	●
	Authorization	●	●	●	●
TACACS+	Authentication	●	●	●	●
	Accounting	●	●	●	●
	Authorization	●	●	●	●
	3.0	●	●	●	●
HTTPS and SSL (Secured Web)		●	●	●	●
SSH v1.5 / v2.0 (Secured Telnet Session)		●	●	●	●
UserName / Password Authentication	Local Authenticatoin	●	●	●	●
	Remote Authentication	●	●	●	●
Management Access Filtering	SNMP	●	●	●	
	WEB	●	●	●	
	Telnet	●	●	●	
DCHP Snooping		●	●	●	●
Management					
Command Line Interface (CLI)		●	●	●	●
Web Interface		●	●	●	●
Telnet (RFC854)		4 sessions	4 sessions	●	●
Remote Ping		●	●	●	●
NTP	SNTP (RFC 2030)	●	●		●
	NTP (RFC 1305)	●	●	●	●
Dual F/W Images		●	●	●	
Configuration Download / Upload		multiple copies	multiple copies	●	●
Software Download / Upgrade	TFTP (RFC783)	●	●	●	●
	Xmodem	●	●	●	●
SNMP	Agent	v1, v2c, v3	v1, v2c, v3	v1, v2c, v3	v1, v2c, v3
RMON	RMON I (1,2,3, & 9 groups)	●	●	●	●
	RMON II Group 16			●	
BootP	Client	●	●	●	●
DHCP	Client	●	●	●	●
	Option 82	●	●	●	●
Event / Error Log	Local Flash	●	●	●	●
	Remote Server via System Log (RFC3164)	●	●	●	●
	SMTP (RFC 821)			●	●
Port Mirroring	One to One	●	●	●	●
	Many to One	●	●	●	●
IP Clustering		●	●	●	●
LLDP		●	●	●	●

* Note: Edge-Core reserves the right to make changes to product specifications without notices

LAN Edge Web Smart Switch Specification

		ES4308-PoE	ES4324
PoE Features			
802.3af for PoE		●	
Power Consumption		7.5W per port on 8 ports, or max power of 15.4W per port on up to 4 ports simultaneously	
Power Management		●	
Power On/Off per Port		●	
Total System Power		70W	
L2 Features			
Spanning Tree	IEEE 802.1D (STP)	●	●
	IEEE 802.1w (RSTP)	●	●
VLAN	802.1Q VLAN	●	●
	VLAN Group	64 VLANs	256 VLANs
	Port-based	●	●
	Q-in-Q		●
Link Aggregation	IEEE 802.3ad with LACP (Dynamic)	(4 trunks of a group)	(4 trunks of a group)
	Static Trunk	(4 trunks of a group)	(4 trunks of a group)
Multicast (IGMP) Snooping	IGMP		v1, v2,v3
Port Mirroring	One to One	●	●
	Many to One	●	●
Broadcast Storm Control		●	●
Flow Control	802.3x (Full-duplex)	●	●
	Back-Pressure (Half-duplex)	●	●
Jumbo Frame Support		●	●
Physical Configuration			
Fixed Ports		7 x 1000BASE-T + 1 Gigabit Combo (RJ45 / SFP) ports	20 x 1000BASE-T + 4 Gigabit Combo (RJ45 / SFP) ports
Dimension (HxWxD) cm.		1 RU (4.4 x 33 x 20.3)	1 RU (4.4 x 44x 17.1)
Weight		2.06Kg	3.72Kg
Flash Memory		2MB	2MB
SDRAM for CPU		256KB	64KB
Packet Buffer		144KB	400KB
Physical Configuration			
MAC Address Table Size		8K	8K
Switching Capacity		16Gbps	48Gbps
Forwarding Rate		11.9Mpps	35.7Mpps
QoS Features			
Priority Queue Scheduling	WRR	●	●
	Strict Priority	●	●
CoS	HW Queues	4	4
	802.1p	●	●
	IP Precedence	●	●
	DSCP	●	●
Security			
IEEE 802.1x	Port-based	●	●
ACL			●
IP Filter		●	●
UserName / Password Authentication	Local Authenticatoin	●	●
	Remote Authentication	●	●
Management Access Filtering	WEB	●	●
Management			
Green Saving	Active-Port Detection	Save Power up to 59.3%	Save Power up to 53.6%
	Cable Length Detection	●	●
Web Interface		●	●
Remote Ping		●	●
Dual F/W Images		●	●
Software Download / Upgrade	HTTP	●	●
SNMP	Agent	v1, v2c	v1, v2c
Management Access Filtering	WEB	●	●
RMON	RMON I (1,2,3 & 9 groups)		●
DHCP	Client	●	●
Event / Error Log	Local Flash	●	●
LLDP		●	
Cable Diagnostic		●	

* Note: Edge-Core reserves the right to make changes to product specifications without notices

Broadband Wireless Access Overview

WiMAX, or Worldwide Interoperability for Microwave Access, describes the standard and implementations of IEEE 802.16 wireless networks. WiMAX's distinctive characteristics give it the advantage for the deployment of last mile applications, wireless broadband access as an alternative to wired DSL or cable, and fixed or nomadic wireless communication deployments. Features giving WiMAX the edge include superior distance connectivity, building penetration, transmission speeds, Quality of Service (QoS) and security.

Edge-Core WiMAX 802.16e CPE series includes :

- WiMAX 802.16e CardBus Adapter (PC200)
- WiMAX 802.16e USB Adapter (US210)
- WiMAX 802.16e Residential Gateway (RG230)
- WiMAX 802.16e Outdoor CPE Indoor Unit (OD200-IDU)
- WiMAX 802.16e Outdoor CPE Outdoor Unit (OD200-ODU)

Begin offering WiMAX services today using Edge-Core's WiMAX certified system to address customer's current and future needs, whether is fixed, nomadic, portable or mobile applications.

Edge-Core WiMAX provides operators an ideal solution for offering high bandwidth services to evolve their networks to industry standard solutions with improved CPE economics. Feature-rich and cost-effective CPEs make Edge-Core 802.16e WIMAX the ultimate solution for providers to significantly boost revenue potential.

Designed from the ground up according to the IEEE802.16 standards to support the full range of broadband applications, Edge-Core WIMAX products have carrier-class designs that support broadband speeds, QoS (Quality of Service) for triple-play services, as well as advanced OFDM and OFDMA technology to support NLOS (Non-Line-of-Sight) operation.

Edge-Core WiMAX 802.16e products allow providers to use 802.16e CPE products immediately. A variety of choices are available to meet the requirements of a myriad of environments, including residential, enterprise, urban and multi-tenant customers with the following benefits:

- WiMAX architecture: Based on the WiMAX Forum's standard implementation of IEEE802.16 industry applications for wireless access in MAN (Metropolitan Area Networks)
- WiMAX Forum Compliant
- Wide variety of frequencies to meet local requirements (2.3.GHz/2.5GHz/3.5GHz)
- Supports TDD duplexing mode
- "Plug and Play" solutions: Easy and simple, self-installable CPEs for non-professional users delivering broadband anywhere.
- NLOS functionality using OFDMA and AAS (Adaptive Antennas Systems) technology.

WiMAX 802.16e Card/CPE

WiMAX 802.16e CardBus Adapter

PC200

Key Features :

- Support 2.3 / 2.5 / 3.5 GHz frequency band
- Compliant with IEEE 802.16e-2005 wave 2 standard
- Comprehensive connection manager software utility for easy management
- Support MIMO (Multiple Input, Multiple Output)
- Power Saving Support : Idle and active mode to conserve energy
- Full Non-Line-of-Sight (NLOS) Deployment
- Windows XP SP2 / Vista Support

WiMAX 802.16e USB Adapter

US210

Key Features :

- Support 2.3 / 2.5 / 3.5 GHz frequency band
- Compliant with IEEE 802.16e-2005 wave 2 standard
- Comprehensive connection manager software utility for easy management
- Rotatable USB interface (0~90 degree) to fit any laptop USB slot placement
- Support MIMO (Multiple Input, Multiple Output)
- Power Saving Support : Idle and active mode to conserve energy
- Full Non-Line-of-Sight (NLOS) Deployment
- Windows XP SP2 / Vista Support

WiMAX 802.16e Indoor CPE

RG230

Key Features :

- Support 2.3 / 2.5 / 3.5 GHz frequency band
- Compliant with IEEE 802.16e-2005 wave 2 standard
- Zero-Install, Plug-and-Play
- Switched-Beam Antenna with better coverage
- MRC (Maximum Ratio Combining) support to enhance receiving signal quality
- Full Non-Line-of-Sight (NLOS) deployment
- Combine with Wi-Fi and VoIP Gateway

WiMAX IEEE 802.16e Outdoor CPE

OD200-ODU / OD200-IDU

Key Features :

- Support 2.3 / 2.5 / 3.5 GHz frequency band
- Compliant with IEEE 802.16e-2005 wave 2 standard
- MRC (Maximum Ratio Combining) Support to enhance receiving signal quality
- Dual Polarization Antenna Deployment with wider coverage
- Combine Wi-Fi and VoIP Gateway
- Battery Backup Supports
- SIM Card Support
- Support MIMO (Multiple Input, Multiple Output)
- High gain antenna deployment provide better coverage and throughput

WiMAX 802.16e Card/CPE Specification

		PC200	US210	RG230	OD200-IDU	OD200-ODU
Physical Interface						
Host interface		CardBus 33 MHz, 32-bit interface, 3.3 volt	USB 2.0			
LAN interface				4*100Base-TX ports	4*100Base-TX ports	
Wireless				1*802.11b/g Access Point (Optional)	1*802.11b/g Access Point (Optional)	
VoIP				2*FXS ports, SIP-Based (Optional)	2*FXS ports, SIP-Based (Optional)	
Additional				1*SIM Card Slot (Optional)	1 PoE port , 1 SIM Card Slot (Optional)	
WiMAX Specifications						
Standard Compliant	IEEE 802 16e-2005	•	•	•	•	•
Frequency	2.3GHz(2.3-2.4 GHz)	•	•	•		•
	2.5GHz	•	•	•		•
	3.3GHz	•	•	•		•
Air Interface	Scalable DF OFDMA	•	•	•		•
Duplexing Mode	TDD/5ms frame	•	•	•		•
Modulation	DL:QPSK, 16QAM, 64QAM	•	•	•		•
	UL:QPSK, 16QAM	•	•	•		•
Channel Bandwidth	2.3GHz 5 / 8.75 / 10MHz	•	•	•		•
	2.5GHz 5 / 10MHz	•	•	•		•
	3.3GHz 5 / 7 / 10MHz	•	•	•		•
MIMO	Matrix A (STC) & Matrix B	•	•	•		•
Transmit Power		23dBm @ QAM 16, 3/4 CTC	23dBm @ QAM 16, 3/4 CTC	26dBm @ QAM 16, 3/4 CTC		24+/-1.5dBm @ QAM 16, 3/4 CTC
Receiving Sensitivity	-94dBm@QPSK, 1/2 CTC	•	•	•		•
Antenna	1 Tx, 2Rx with MRC	•	•	•		•
Antenna Gain		2dBi typical, external dipole Antenna	2dBi typical, Built-in dipole Antenna	External Omni-Directional antenna (4dBi)		12dBi for 2.3/2.5GHz 15dBi for 3.5GHz
Max. Throughput	in 64 bytes packets	DL: 1.2Mbps/ UL: 0.5Mbps	DL: 1.2Mbps/ UL: 0.5Mbps	DL: 1.2Mbps/ UL: 0.5Mbps		DL: 1.2Mbps/ UL: 0.5Mbps
	in 1400 bytes packets	DL: 12Mbps / UL: 4.9Mbps	DL: 12Mbps / UL: 4.9Mbps	DL: 12Mbps / UL: 4.9Mbps		DL: 12Mbps / UL: 4.9Mbps
Security / Encryption	PKMv2 with 128bit AES/CCM	•	•	•		•
	EAP-TLS/TTLS-MSCHAPV2	•	•			
QoS Mechanism	Dynamic Service Flow Creation, Change, Deletion Scheduling: UGS, RT-VR, NRT-VR, ERT-VR, BE	•	•	•		•
		•	•	•		•
HO (Hand-off)	Hard HO / Optimized Hard HO	•	•	•		•
Power Management	Idle and active mode	•	•			
OS Support		Windows XP SP2 / Vista	Windows XP SP2 / Vista			
Networking						
Network Management	Web-based configuration			•	•	
	Telnet / SNMP v1, v2			•	•	
Firewall				NAT & NAPT, DoS attack protection, SPI (Stateful Packet Inspection), DMZ control	NAT & NAPT, DoS attack protection, SPI (Stateful Packet Inspection), DMZ control	
ARQ	ARQ ACK type 1 - Cumulative ACK			•	•	
	ARQ ACK type 2			•	•	
VPN Pass through				•	•	
Bridging	802.1D Self Learning Bridge			•	•	
IP Protocol	Packet IPv4			•	•	
VoIP Specifications						
Standard Compliant	SIP RFC3261			•	•	
Voice Codec	G.711a/u, G.729a/b, G.726, G.723			•	•	
Call Features	Call Waiting, Call Transfer, Call Forward, 3-way Conference Call, Fax (T.38)			•	•	
Wi-Fi Specifications						
Standard	IEEE 802.11b/g			•	•	
WiFi Security	WPA/WPA2, WEP64/WEP128			•	•	
Max. Throughput	22.4Mbps			•	•	
Tx power	16dBm@11Mbps & 802.11b			•	•	
	14dBm@54Mbps & 802.11g			•	•	
Rx sensitivity	-85dBm@11Mbps & 802.11b			•	•	
	-74dBm@54Mbps & 802.11g			•	•	
Mechanical						
Power Consumption		2.4W	2.4W	<13W	<13W	6W
Operating Temperature		-5 ° - 45 °C	-5 ° - 45 °C	0 ° - 45 °C	0 ° - 45 °C	-40 ° - 55 °C
Dimension (H x W x D)		132 x 57.5 x 13.1 mm	90 x 34.5 x 13 mm	170 x 184 x 80 mm	170 x 184 x 80 mm	229.8 x 219.55 x 71.3mm
Standards and Regulations						
EMC	FCC part 15B Class B	•	•	•	•	•
	CE EN55022 Class B	•	•	•	•	•
Safety	CB60950-1	•	•	•	•	•
Environmental	ETS 300 019	•	•	•	•	•
Radio		FCC part 27	FCC part 27	FCC part 27 (WiMAX); FCC part 15 (Wi-Fi)	FCC part 15C (Wi-Fi)	FCC part 15,27, EN 302 326-1 V1.1.1 EN 302 326-2 V 1.1.2

* Note: Edge-Core reserves the right to make changes to product specifications without notices

Wireless Network Overview

Edge-Core wireless network solution is completed by a feature-rich outdoor bridge (WA6202A/WA6202AM), and an enterprise level access points (WA6102X / EAP8518). All of which can be used for simple, cost-effective installation of wireless environments and are suitable for the following deployment types:

- Point to point wireless links for building to building connectivity, bridging and backhauling
- Point to multipoint wireless links to extend the main network to remote branch offices, warehouses or other exterior buildings without leased lines
- Back-haul for hotspots, hot zones and community networks
- Last mile broadband services for rural area where there is no DSL

Edge-Core wireless network solution includes the following features and benefits :

- **Comprehensive wireless network solution covering both 802.11a + b/g and advanced 802.11n Access Points for different application scenarios**
- **Real-time of Voice & Multi-Media**
  - Quality of Service for Voice and Multi-Media stream
  - IEEE 802.1p (WA6202A/AM, WA6102X), 802.11e
- **Excellent Management Features**
  - 802.1Q VLAN tagging
  - Multiple SSIDs
  - SNMP v1, v2, v3, Web and CLI via telnet and console
- **Deployment**
  - PoE for easy deployment and cost savings
  - WDS to extend the network and create a wireless network
  - Auto Channel Selection simplifies deployment by testing and selecting the best channel
  - 4 N-type connectors for assorted antenna options (WA6202AM)
  - RSSI LED Indicator for installation (WA6202A/AM)
  - High Power RF Design (WA6202A/AM, WA6102X)
  - Antenna space diversity for good coverage (WA6202A/AM)
- **Superior Weatherproof design for extreme conditions, including IP68 waterproofing rating (WA6202A / WA6202AM)**

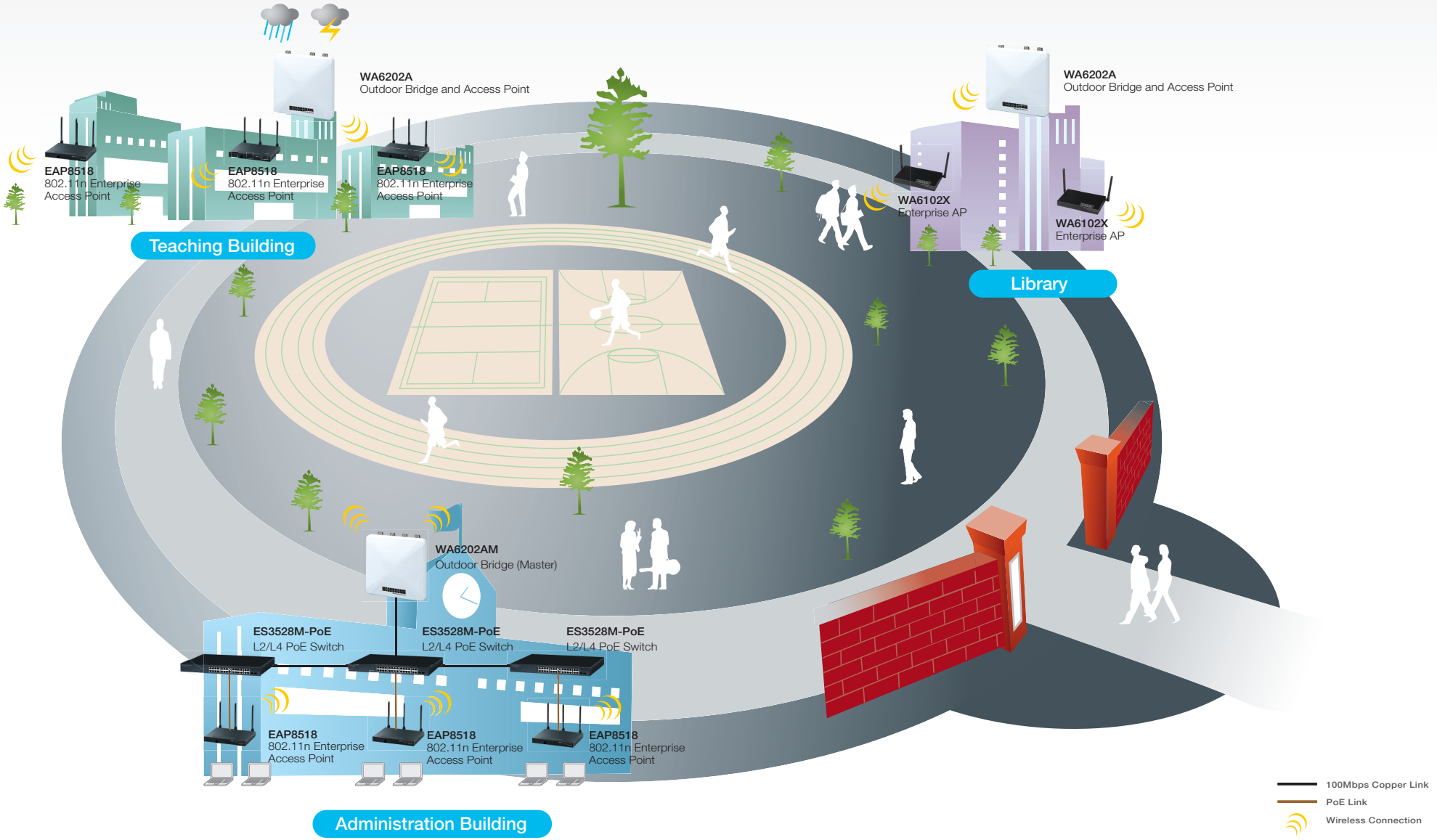
General comparison on WiFi and WiMAX:

	WiFi	WiMAX
Standard	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n	IEEE 802.16e
Range	LAN deployments	MAN deployments
Spectrum	(Unlicensed) 2.4 and 5 GHz	(Licensed and Unlicensed) 2.3 ~ 2.4 GHz 2.496 ~ 2.696 GHz 3.3 ~ 3.6 GHz
Deployment	Line of Sight (LOS)	Line of Sight (LOS) Non-line-of-sight (NLOS)
Channels	20MHz or 22MHz channels	5 MHz and 10 MHz channels
Channel Access	SC (Single Carrier) OFDM (Orthogonal Frequency Division Multiplexing)	Scalable OFDMA (Orthogonal Frequency Division Multiple Access)
Security	HTTPs, SSL, SSH, AES, TKIP, WEP, WPA, WPA2, 802.1x (EAP, MD5, TLS, TTLS, PEAP), etc.	AES/CCM 128-bit PKMv2 Authorization
QoS	802.11e (WMM)	Dynamic Service Flow Creation, Change, Deletion by BS and MS UGS, BE, RT-VR, NRT-VR, ERTPS
Target Deployments	Residential, businesses, hotspots and hot zones applications, etc.	Wireless Broadband alternative to DSL and cable

Campus Solution

The Edge-Core wireless solution is suitable for the following deployment types :

* Point to point wireless links for building to building connectivity, bridging and backhauling
* Point to Multipoint wireless links to extend the main network to remote branch offices, warehouses or other exterior buildings without leased lines
* Back-haul for hotspots, hot zones and community networks
* Last mile broadband services for rural areas where DSL is not deployed



Wireless

Indoor Dual Band Access Point/ Bridge

WA6102X

802.11a/b/g | PoE | Detachable Antennas | Multi SSIDs | WEP | WPA | WPA2 | WDS | VLAN

Physical Features :

- Radio : 802.11 a + b/g
- Port Interface : 1 x 100Mbps port
- PoE (Power Over Ethernet)
- Antennas : 2 x 4.5 dBi detachable antennas
- Dimensions (HxWxD) cm : 2.5 x 21.0 x 12.5
- Weight : 0.80kg

Indoor Dual Band Access Point/ Bridge

EAP8518

802.11n | 802.11a/b/g | PoE | Detachable Antennas | Multi SSIDs | WEP | WPA | WPA2 | WDS | VLAN

Physical Features :

- Radio : 802.11a/b/g/n Draft 2.0
- Port Interface : 1 x 100Mbps port
- 3 removable antennas
- PoE (Power Over Ethernet)
- Dimensions : (HxWxD) cm : 2.5 x 19.0 x 15.0
- Weight : 0.59kg

WA6102X

* 1 x 100Base-TX RJ-45 port with PoE support
* 2 detachable antennas
* Support both 5GHz and 2.4GHz
* Support flexible remote management
* Support advanced wireless security functions : WEP/WPA/WPA2/802.11x/AES/TKIP/RADIUS authentication
* Support Multi SSIDs and VLAN

EAP8518

* 802.11n draft v2.0 compliance with improved speed, extended wireless range and coverage
* Backward compatible to 802.11a + b/g
* Support both 5GHz and 2.4GHz
* PoE support for easy deployment and cost savings
* 3 detachable antennas
* Support flexible remote management
* Support advanced wireless security functions: WEP/WPA/WPA2/802.11x/TKIP/RADIUS authentication
* Support Multi SSIDs and VLAN

Wireless Specification

Dual Band Outdoor AP/ Bridge

WA6202A

WA6202AM

802.11a/b/g | WEP | WPA | WPA2 | WDS | PoE | Multi SSIDs | IP68

Physical Features :

- Radio : 802.11 a + b/g
- Port Interface : 1 x 100Mbps port
- PoE (Power Over Ethernet)
- WA6202A
  Antennas : 3 x N-type connectors + 17 dBi integrated panel antenna
- WA6202AM
  Antennas : 4 x N-type connectors
- Dimensions (HxWxD) cm : 7.4 x 19 x 19.5
- Weight : 1.54kg

WA6202A/ WA6202AM Antenna Selection

	2.4 - 2.5 GHz		4.9 ~ 5.5 - 5.8 GHz		Outdoor Accessory
Model Number	ACC04-050280	ACC04-054270	ACC04-20212A	ACC04-200180	WA5201M-CBL-3
Antenna Type	High Gain Omni-Directional Antenna	High Gain Omni-Directional Antenna	High Gain Directional Panel Antenna	High Gain Omni-Directional Antenna	Low lose antenna cable N-Plug to N-Plug 3M (For All outdoor models)
1HPBW/Horizontal	360°	360°	9°	360°	
HPBW/Vertical	15°	15°	9°	12°	
Frequency Range	2.4-2.5 GHz	2.4-2.5 GHz	5.15~5.875GHz	5.5 ~ 5.825GHz	
Gain	8dBi	8dBi	23dBi	8 dBi	
Connector Type	N-Jack	N-plug	N-jack	N-jack	
Installation Environment	Outdoor	Outdoor	Outdoor	Outdoor	

WA6202A

WA6202AM

* 1 x 100BASE-TX RJ-45 with PoE support
* 4 N-type antenna connectors, 2 for 2.4GHz, 2 for 5GHz antennas (WA6202AM)
* Support 802.11a/b/g, 5GHz, 2.4GHz
* Support multiple operation mode, WDS
* Support advanced security functions : WEP/WPA/WPA2/802.11x/TKIP/RADIUS authentication
* Fully weatherproof (IP68 certified) with operating temperature -40~60℃

Wireless Specification

		WA6202A	WA6202AM	WA6102X	EAP8518
Network Standard					
802.11a		•	•	•	•
802.11b/g		•	•	•	•
802.11n (Draft 2.0)					•
Wireless Features					
AP and WDS modes		•	•	•	•
Master / Slave		Configure by Software	Configure by Software		•
RSSI		LEDs, WEB	LEDs, WEB	CLI	
Multiple SSIDs		•	•	•	•
Turbo Mode a/g		•	•	•	
IEEE 802.11f IAPP draft v2.2 Seamless Roaming		•	•	•	
Bran-ETSI Support DFS/TPC (802.11h standard)		DFS	DFS	DFS	DFS2
Adjustable Transmit Power		•	•	•	•
Frequency Band		2.400 to 2.497GHz 5.15 ~ 5.825GHz	2.400 to 2.497GHz 5.15 ~ 5.825GHz	2.400 to 2.497GHz 5.15 ~ 5.825GHz	2.300 to 2.500 GHz 4.9 to 5.925GHz
Data rate	IEEE 802.11a	Up to 108Mbps (turbo mode)	Up to 108Mbps (turbo mode)	Up to 108Mbps (turbo mode)	Up to 54Mbps
	IEEE 802.11b	1/2/5.5/11Mbps	1/2/5.5/11Mbps	1/2/5.5/11Mbps	1/2/5.5/11Mbps
	IEEE 802.11g	Up to 108Mbps (turbo mode)	Up to 108Mbps (turbo mode)	Up to 108Mbps (turbo mode)	Up to 54Mbps
	802.11n (Draft 2.0)				300Mbps (per band)
Modulation		IEEE 802.11a: BPSK, QPSK, 16-QAM, 64-QAM IEEE 802.11b/g: CCK, BPSK, QPSK, OFDM	IEEE 802.11a: BPSK, QPSK, 16-QAM, 64-QAM IEEE 802.11b/g: CCK, BPSK, QPSK, OFDM	IEEE 802.11a: BPSK, QPSK, 16-QAM, 64-QAM IEEE 802.11b/g: CCK, BPSK, QPSK, OFDM	OFDM with BPSK, QPSK, 16 QAM, 64 QAM; DBPSK, DQPSK, CCK
Layer 2 Features					
VLAN		•	•	•	•
Spanning Tree	802.11D	•	•	•	•
Broadcast Strom Control		•	•	•	
QoS Features					
IEEE 802.11e -- WMM Baseline		•	•	•	•
WMM-Scheduled Access		•	•	•	•
Security Features					
WPA/WPA2		•	•	•	•
WEP: 64, 128, 152 bit		•	•	•	WEP:64,128
AES & TKIP		•	•	•	•
802.1X Supplicant Mode		•	•	•	•
RADIUS Authentication		Client	Client	Client	•
EAP (Extensible Authentication Protocol)	MD5	•	•	•	•
	TLS	•	•	•	•
	TTLS	•	•	•	•
	PEAP	•	•	•	•
Management Interface Access Control	WEB	•	•	•	•
	Telnet	•	•	•	•
	SNMP	•	•	•	•
	Management via Wireless connections	•	•	•	•
Filtering	Management via IP address		•	•	•
	Client to Client	•	•	•	•
	VAP	•	•	•	•
	Ethernet type	•	•	•	•
	Uplink MAC	•	•	•	•
ACL (Access Control List)		•	•	•	•
HTTPS and SSL (Secured Web)		•	•	•	•
SSH 1.5/V2.0 (Secured Telnet session)		•	•	•	•
Background Scan & Rogue AP detection		•	•	•	
Hide Beacon		•	•	•	•
Management Features					
WEB		•	•	•	•
Telnet		•	•	•	•
SNMP	v1	•	•	•	•
	v2c	•	•	•	•
	v3	•	•	•	•
CLI	Telnet	•	•	•	•
	Serial Port	•	•	•	•
Dual Images		•	•	•	•
Software Download/upload		WEB, FTP, TFTP	WEB, FTP, TFTP	WEB, FTP, TFTP	FTP, TFTP, HTTP
Configuration Download/upload		WEB, FTP, TFTP	WEB, FTP, TFTP	WEB, FTP, TFTP	FTP, TFTP, HTTP
DHCP		Client	Client	Client	Client/Relay
SNTP		•	•	•	•
Event / Error Log / Syslog		•	•	•	•
Configurable Traps and Syslog Receivers		•	•	•	•
Environment					
Operating temperature		-40° - 60℃	-40° - 60℃	0° - 50° C	-10° - 50° C
Lightning Protection		•	•		•
Waterproof		IP68	IP68		

* Note: Edge-Core reserves the right to make changes to product specifications without notices